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Original Articles

THE DIETETIC TREATMENT OF NEPHRITIS.*

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So powerless are we directly to influence the kidneys by drugs that diet becomes of prime importance in our efforts to do our best for patients suffering from disablement of these organs, which play so leading a rôle in excretion.

The principle which should guide us may be expressed in one word—rest, provided that we remember that in the living body rest is a relative term. Absolute rest, as evidenced by cessation of the output of the kidneys, means death before many days. By rest we mean here, of course, such limitation of demand as may promote either complete restoration of functional activity, or such measure of it as may be possible, together with maintenance of the same for the longest possible time and without injury to the body as a whole or to its other important constituent parts.

Acute nephritis is of all grades of intensity, varying from a trivial process, the only danger of which is lest it become chronic, to one which totally and suddenly disables the kidneys. It is probably nearly always the result of an infection in which the kidneys may bear the brunt of the poisoning or may participate in a wide-spread disturbance, perhaps early, but more often later, in the course of the disease.

For twenty-five years it was almost universally considered the best practice to give a rigid milk diet in these cases and to force water. Water, of which milk is, of course, largely composed, was regarded as the best diuretic. Milk, moreover, contains, in an easily assimilable form, every nutritious principle necessary for the maintenance of life. The idea underlying the large ingestion of water was to scour the blocked tubules. But we have learned of late years that in many cases the main trouble lies behind the tubules in the glomeruli, the incapacity of which to filter is, in the acute stage, more likely to be increased than diminished by increasing the blood mass and blood pressure.

Experience teaches us that recovery, often complete and lasting, is the rule in acute nephritis provided that a brief danger period can be tided over. Starvation is, therefore, now considered the best dietetic treatment of acute nephritis, absolute starvation for a few days in the severe cases with very scanty or suppressed urine and edema of rapid onset and growth. In cases of less severity, the kidneys allowing the passage of water and dropsy not increasing, about a quart of milk can be given daily and the needs of the system eked out by cereals and fats in moderate amount. The phosphoric acid in the milk which may be difficult of excretion can be precipitated in the intestine by the addition of small quantities of calcium carbonate, as suggested by von Noorden, who also acutely calls attention to the inconsistency of those who absolutely prohibit alcohol but permit koumyss and matzoon. Moderate quantities of alcohol do no harm, he believes, though he seldom uses it. The quantity of food is to be guaged by the degree of kidney disablement as measured by the amount of urine rather than by the amount of albumin, the state of nutrition of the patient and his gastrointestinal digestive power, all combined. As convalescence advances the quantity and variety of food should be increased, including proteids. Animal broths are almost the last things to be allowed, containing little of nutritive value but extractives, which are dangerous to those liable to renal intoxication.

From a practical point of view the dietetic management of acute nephritis and of acute exacerbations of the chronic forms is essentially the same. The general condition of patients suffering from the latter may not tolerate as complete or prolonged starvation as may be safe in the former.

We have learned in these latter days that our knowledge of the real pathology of nephritis is more limited than we once thought it to be and that consequently our classification of its forms is as unsatisfactory as it is tentative. The clinician who, discouraged by his frequent failure to apply the classification of the pathologist to practice, makes a classification mainly on clinical lines, does not help matters much. For our present purpose, therefore, I shall divide the chronic cases into two classes—those cases with and those without dropsy. The second class is chiefly made up of the arteriosclerotic and other cortically atrophied kidneys in which dropsy is conspicuously absent as long as compensatory left ventricular hypertrophy is present. In cases of chronic nephritis with dropsy, especially if the dropsy is mainly of cardiac origin, limitation of liquids is important as a rule.

As far as diet alone is concerned the chief, if not the sole, difference in the treatment of dropsical and non-dropsical cases lies in the degree of limitation of liquids, including water. In some cases, and in some stage of any case, water may be excreted with difficulty by the kidneys and, if the myocardium be at all insufficient, increasing the blood mass merely increases the load of the already overburdened heart.

In the chronic cases we have, as a rule, little hope of true recovery and yet we now and then see such a case as this. A young woman who has had renal albuminuria for more than a year marries. She is cautioned with regard to pregnancy. She nevertheless becomes pregnant before long, passes through it and labor successfully, loses her albuminuria, has a second child and remains absolutely well some years later. In other cases, apparently of the so-called parenchymatous or dif-

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192957

fuse type, we note the maintenance of apparent perfect health in combination with a highly albuminous and cast-rich urine for years and years. Apart from these exceptions, however, our aim must be to enable the patient to tolerate his disease as long and as comfortably as possible. Thoughtful attention must be given to the body as a whole, and its nutrition. What doth it avail a man to gain sound kidneys if he lose his life? This means careful individualization of our cases and the effort in each case to adjust the amount, quality and variety of the food to the needs of that particular case at the given time, according to the stage and intensity of the renal process, the condition of other organs and of the whole organism. The best place for printed diet lists so kindly furnished us by the manufacturers of dietetic preparations for Bright's disease, diabetes, gout and other entities, is the fireplace. The physician should be his own prescriber of food as well as of drugs.

The exercise of that form of common sense which, if the ideal be not obtainable, knows how to recognize and secure the best regimen and mode of life possible for the case in hand is no mean help.

In cases with dropsy, with a strictness largely proportional to the degree thereof, a relatively dry diet is advisable. In the cases of contracted kidney, including the "gouty kidney" of the English, I am inclined to think von Noorden right in his opinion that we have erred in the past in forcing water, even in the absence of dropsy, thereby endangering the compensatory hypertrophy of the left ventricle, on the maintenance of which life often depends more than on the kidneys, to the slow wasting of which the system has a chance to accommodate itself.

It seems to me that the main service which von Noorden has rendered is his cogent advocacy of the limitation of liquids. The pendulum had already begun to swing away from an exclusive milk diet in chronic cases, at least, before his views became common property in this country. His varied diet with a fair amount of proteid is in all essentials the same as that which I have advised my patients and taught my students to follow for at least fifteen years past. I never could see anything in the ban put on red meat save an ingenious mode of limiting the amount of meat. He who eats no meat save practically the breast of chicken eats very little, and less as time goes on, so weary of it does he become. Is it not better to talk straight as well as to think straight? I have long been in the habit of allowing my chronic nephritics meat of any color they please once a day, with fish or eggs at the other meals. As to amount I believe that the best results are to be attained only by study of the special case. We have all seen cases in which nephritis has been overlooked for some reason or another and which were suffering from too much food of all kinds. But I am sure that I have seen more patients with recognized nephritis suffering from an insufficiency than an excess of proteids. Cooking should be simple. Spices and condiments may be undesirable and their prohibition involves no hardship, at all events. Green vegetables and fresh fruits in their season are almost without exception permissible, nay desirable. The more perishable fruits, such as peaches and berries, which have traveled long distances to market, are apt to be poor things for anybody. Varieties are selected with more reference to their appearance on arrival than to their digestibility or palatability. I note that von Noorden forbids celery. I do not know how things may be now, but when I studied in Germany thirty-odd years ago the only form of celery I ever saw on the table was the root. In this country I have seen only the stalk, which, either in the raw or cooked state, I can not think detrimental to nephritics.

The red meat calls up another fad—that of the avoidance of water with meals. Its true purpose may originally have been to limit alike food and drink and thus to reduce weight. But many persons have got it into their heads that water between meals is no longer water. The interdiction of red meat and of water with meals may be an easy way for the physician to attain a certain end. But the easy way is not always the best way, and I believe that we serve our patients, humanity and ourselves better if we avoid shibboleths, even if the so doing involves trouble and time.

Many women and some men seem to have nothing better to do than to exchange confidences—if those things can be called confidences which are openly talked of in street cars or in places of public amusement—as to their ailments, their physicians and their remedies. I recall a story which I heard of the late Dr. H. J. Bigelow, the great surgeon. A woman sent for him and talked for more than half an hour without interruption from him. When she had concluded he remarked: "Well, as near as I can find out, you have sent for me to ask whether a remedy which Dr. A. prescribed for Mrs. B. for a complaint which you have not got would be good for you." This woman had the sense to refer the question to her physician. Some have not, but go ahead and take the remedy. The practice of medicine is even to-day more of a black art than it would be if physicians always thought clearly and took the trouble to explain principles broadly to their patients. Of course, our knowledge is most imperfect and we must often base our action on half or quarter truths, even on what is not the truth although we believe it to be such at the time. But let us recognize that a fraction of truth is but a fraction, and bear in mind the saying credited to the late Speaker (Tom) Reed—"People say truth is simple: half truths are simple but the whole truth is the most complicated thing on God's earth."

I have no personal experience with the restriction of salt in the diet of nephritics. The investigations of Vidal, Javal, Lemiérre Kövesi, Róthe-Schultz, Strauss and others make it certainly desirable that further clinical evidence be acquired as to its value in kidney disease with dropsy. While the reports of the many observers are by no means unanimous, the evidence in favor of a low sodium chlorid allowance is sufficient to make us ask for more light. I am only too conscious of the sketchiness of my remarks on this important subject. The imperfection of our knowledge and the size of the subject render it impossible, for me at least, to qualify or to go into minute detail. Principles are more important and of chief concern to us here.

The leading ones pertaining to the dietetic treatment of nephritis may be stated somewhat as follows:

1. Such control as we may have to-day of nephritis lies in diet and mode of life rather than in drugs.

2. Such drugs as are useful are so in their effect on the general organism or on the heart rather than on the kidneys directly.

3. In all cases of nephritis our broad aim is to spare the kidneys unnecessary work, not forgetting that the urinary is but one of the systems which comprise the body.

4. In acute nephritis, as well as in acute exacerbations of the chronic forms, Doctors Diet and Quiet should work together. Starvation for a few days, pro-

portional to the intensity of the process and the strength of the patient, is the keynote of the dietetic management.

5. In the chronic forms we seek to lengthen and lighten life, an aim often largely within our power of attainment. Especially in the contracted form of kidney disease many years of life, much of the happiness which comes from achievement, days and nights of comfort, may hinge on our skill in adapting sound principles to the particular case and in securing the co-operation of the patient in carrying out the same, persistently, not spasmodically. Dietary restriction should be in the main quantitative rather than qualitative. Alcohol in moderation is not necessarily a poison and may be an aid to digestion.

6. The excess of proteid, not proteid in itself, is harmful to the chronically sick kidney.

7. A varied is more likely than a monotonous diet to promote the manufacture of good blood and thus to promote good nutrition of the body in general and of the myocardium in particular.

8. The amount of albumin is in itself no guide as to the extent of dietary restrictions.

ALBUMINURIA IN NEPHRITIS AND BRIGHT'S DISEASE.*

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Nicholas Cotungo, in the latter part of the eighteenth century, called attention to the coagulable quality of the urine in cases of dropsy, and Richard Bright showed the relation of disease of the kidney to dropsy and albuminuria in the early part of the succeeding century. Subsequently the pathologic observations of Bright, of Rayer and of others seemed to establish the invariable association of these conditions. Pathologists of the new school of cellular pathology confirmed the relationship of albuminuria and dropsy with an inflammatory lesion of the kidney so that in the course of time "albuminuria" and "nephritis" became terms of nearly identical practical significance.

As time went on, however, some of the physiologic chemists found that transient albuminuria or cyclical albuminuria might occur without any evidence of lasting disease of the kidneys. In the ordinary course of practice, however, physicians have looked on albuminuria as significant of nephritis, unless the evidence in favor of some temporary congestive or other condition has been well nigh overwhelming. The determination of the proper relations of these conditions to one another was made more difficult by the classifications suggested by various pathologists and clinical pathologists who sought to distinguish a number of types of nephritis and laid down complicated criteria of differential diagnosis, with the result that practically every form of albuminuria might be made to fall in some artificial group. The more accurate urinary examinations and the more careful medical diagnosis of recent years, however, have established the fact that it is necessary to distinguish between nephritis in the sense of the pathologist and nephritis or Bright's disease in the clinical sense.

It must be recognized that the kidney is a highly differentiated organ subjected to exceptional irritations in its important function of excretion, and that inflammatory lesions in the minute pathologic sense may be extremely frequent without of necessity leaving any lasting results. Furthermore, it is obvious that nephritis does not become a condition of grave significance until the pathologic changes have attained a degree of intensity or have involved a proportion of the kidney substance sufficient to interfere with the complex functions of the organ so as to imperil the general health. The presence of slight intertubular exudation, of moderate or even extensive, if uncomplicated, degeneration of the epithelia of the tubules, or of slight alterations in the glomeruli, would not justify a positive assertion that the case was one of Bright's disease in the clinical sense. The distinction, of course, is one of degree rather than of kind, but the point at which I am aiming is to bring out the fact that an excretory organ like the kidney is excessively prone to slight and transient alterations which in all probability will undergo satisfactory resolution without permanent impairment of the integrity of the organ.

Much difference of opinion has arisen on account of this discrepancy between slight pathologic lesions and functional or clinical manifestations. In all of the cases now in mind, albuminuria, the great criterion of nephritis, is likely to be encountered, and yet the pathologic conditions are frequently neither serious at the time nor lasting and progressive in character. It is hopeless to attempt a classification based on minute differences in the pathologic findings, and for practical purposes the old clinico-pathologic classification is still the most satisfactory. According to this, two forms of Bright's disease may be recognized, the acute and chronic parenchymatous nephritis, and a third form of nephritis, somewhat different in its clinical course and effects, chronic interstitial nephritis. Individual instances of the first and second forms vary much in the actual pathologic lesions. Sometimes epithelial degeneration is paramount; at other times exudative changes are conspicuous; changes in the glomeruli are usually pronounced and hemorrhagic processes may be conspicuous. In chronic cases, fibrosis sometimes becomes nearly as extensive as in chronic interstitial nephritis. The pathologic picture, therefore, is variegated in the extreme. Contrasted with these cases and essentially distinct from them is chronic interstitial nephritis. Analogy would indicate that the acute interstitial nephritis of the pathologist, occurring in acute infections and toxemias, might go on to the development of the granular contracted kidney, but, so far as definite knowledge is concerned, it must be recognized that this is probably rarely the sequence of events and that practically chronic interstitial nephritis is usually one of the concomitants and generally a comparatively late one of arteriosclerosis.

At the present time chronic interstitial nephritis is recognized as constituting but a subsidiary part of a more general disease in the majority of cases; while, in older days, it was regarded as an independent condition. According to this later view, polyuria and albuminuria may be regarded as significant merely of a renal form, or a renal phase, of a general vascular disease.

Contrasted with these three types of permanent renal disease, there is a large number of conditions in which the kidney is temporarily involved, in which evidences of renal irritation or inflammation exist, and in which the pathologist might discover some pathologic changes, though the subsequent course is one of rapid resolution. The mere element of speedy restoration is evidently not

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dependent so much on the extent as on the character and intensity of the renal trouble. Such cases are frequent in association with infectious febrile processes and with circulatory disturbances. It is in these cases that some of the clinical signs, especially albuminuria, of Bright's disease occur, and it is these that cause the difficulty in distinguishing between true Bright's disease in the sense of the clinician and the nephritis of the pathologist. Doubtless until some means have been devised for estimating accurately the functional capacity of the kidney, it will remain difficult for the clinician to establish positive diagnoses and prognoses in certain borderline cases, but in the meantime a close study of the general features of the cases in which albuminuria and casts are encountered, but in which lasting nephritis does not follow, will enable the clinician to avoid error in the majority of instances.

Before proceeding to further discussion let me emphasize with all earnestness that diagnosis in renal disease can not proceed from the urinary examination alone any more than can the diagnosis of cardiac disease from physical exploration alone, or that of typhoid fever solely from the examination of the serum for the reaction of agglutination. Taken in conjunction with the general symptomatology, accurate examinations of the urine are indispensable, but without the general conditions as a check urinary examination may be as misleading as would be the symptoms without the urinary findings.

It has interested me to look over the records of my private cases to determine how frequently albuminuria occurs in the run of cases in general office practice. These figures have the advantage that they represent the results of a single examiner's work and from one method of examination (heat and nitric acid). In the great majority of cases several examinations were made at different times, an added advantage considering the frequency with which albuminuria occurs as a temporary condition.

Among 581 cases there were 51 cases of undoubted clinical nephritis or Bright's disease, exclusive of chronic interstitial nephritis. In all of these there was constant and more or less uniform albuminuria.

In 74 cases of arteriosclerosis there was more or less inconstant albuminuria, without casts in 16 and with casts in 58. A number of these cases might properly have been classed as chronic interstitial nephritis. In all of these there was constant and more or less uniform albuminuria. In practically all it may be assumed that a certain degree of chronic interstitial nephritis existed, though other manifestations of arteriosclerosis dominated the clinical picture.

In 187 cases there was occasional or less often constant albuminuria in association with acute infectious diseases, gout, diabetes, tuberculosis, syphilis, cystitis, pyelitis, cardiac diseases, movable kidney, gallstones and jaundice, stone in the kidney, in occasional cases of other diseases, in pregnancy, and in adolescents without discoverable disease.

In 41 cases, in gouty or so-called lithemic subjects, there was occasional albuminuria at times when the urine was excessively acid.

In 215 cases (37 per cent.) there was no albumin at any time. In 11 cases casts were found without albumin.

I am ready to admit the unreliability of statistics, but would vouch for the essential accuracy of these figures. It might seem at first that urinary examinations are of little value, if out of 581 cases albuminuria without Bright's disease occurred in 202, no albuminuria in but 215, and as an indication of Bright's disease in only 51. Closer examination of the records, however, establishes several important points.

With very few exceptions, the albuminuria of the supposedly non-nephritic cases was qualified as "albuminuria in traces," and with nearly equal frequency repeated examinations showed that the condition was fluctuating in degree or temporary in duration. The exceptions to these rules were for the most part cases of arteriosclerosis, in which, as I have said, there was doubtless always a greater or less degree of chronic interstitial nephritis, though the renal manifestations were not generally predominant.

To establish the frequency of albuminuria in cases of severe acute infections and in cardiovascular diseases I have collected the data obtained from my records at the University Hospital. Summarizing the records of a great variety of infections, it is found that among 176 cases albumin was present in 59 and absent in 117. Among 304 cases of typhoid fever albuminuria was present in 83, clinical nephritis in 14, and albuminuria was absent in 207.[1]

Among 154 cases of cardiovascular disease, albumin or casts, or both, occurred in 81, and neither albumin nor casts in 73.

Table 1 shows the conditions in different types of such diseases:

No.	Disease.	Albumin and casts.	No. Albumin.
1.	Aneurism	6	15
2.	Arteriosclerosis	10	6
3.	Myocardial disease	10	8
4.	Malignant endocarditis	3	1
5.	Aortic valve disease	8	7
6.	Mitral disease	29	26
7.	Combined valve disease	15	10
	Totals	81	73

In considering these figures it must be remembered that a certain number of the cases were instances of combined cardiac disease and Bright's disease, but it is equally clear that the large proportion of cases of albuminuria require a further explanation.

A careful scrutiny of the clinical course of these cases of cardiovascular disease showed that almost without exception the condition of the urine was extremely variable, and fluctuated in correspondence with variations in the underlying condition, so that the degree of albuminuria was in a measure commensurate with the degree of cardiac insufficiency.

I wish to refer very briefly to the occurrence of albuminuria in cases of secondary syphilis, because I have found in a number of cases that the discovery of albumin has been looked on with great apprehension. My experience in this field has naturally been limited, and I content myself, therefore, with calling attention to the fact that slight or sometimes considerable albuminuria is not infrequent in the secondary stage of this disease. It has seemed to me that active mercurial treatment might in some instances be the responsible agent, but I am sure that slight albuminuria occurs independently of this, and in my experience it has proved a matter of no serious moment.

1. In explanation of the lower proportion of non-nephritic hospital cases showing albuminuria as compared with my private cases, I must explain that the examinations in the latter were made with much more care to detect even the slightest traces of albumin. In addition to the greater experience of the examiner, an important factor in this greater accuracy was the use of a reflector of prisms which gives a light specially favorable to the detection of faint turbidity in the liquid tested. The method used was to heat only the upper part of the column of urine in the test tube.

Another subject on which I wish to say a few words is that of the special form of albuminuria found in amyloid disease of the kidneys. It is well known that in chronic forms of albuminuria, the serum albumin is in great excess of the globulin. The conditions are reversed in amyloid disease to such an extent that preponderance of globulin in a chronic case warrants a strong suspicion of amyloid disease of the kidney. In several cases I have in this way been able to recognize this condition even before sufficient amyloid disease of the liver or spleen had occurred to enlarge these organs and to make them palpable.

In conclusion, let me say that the purpose of this paper has been primarily to direct attention to the fact that albuminuria is an extremely common occurrence in various general diseases and that, though it may in a sense indicate an inflammatory condition of the kidney, such inflammation or nephritis may be of merely pathologic rather than of clinical significance, unless the albumin is considerable in amount and more or less constant in occurrence. The nature of the accompanying tube casts must not be relied on too greatly to determine the seriousness of the renal lesion, and in particular the presence of an occasional hyaline cast or even the frequent occurrence of such must not be regarded with too much apprehension. The modern method of centrifugation and the consequent examination of quite fresh urine increases the likelihood of our finding casts, and there is often difficulty in distinguishing between the insignificant cylindroid of the mildest grades of renal irritation and the definite hyaline cast of more decided disease. Even the latter, however, is so frequent in cases of arteriosclerosis, cardiac disease, hepatic disease, jaundice and gouty affections without serious renal disease that its significance is more or less trivial, unless general clinical conditions accentuate the importance of its presence. I do not wish to convey the wrong impression that I estimate lightly the importance of urinary examination; far from it. But I know from much experience that a trace of albumin is too often magnified in importance in the physician's mind, and that the clinical conditions as a whole are not sufficiently considered. Above all things, it is important in cases of suspected renal disease that the urine be repeatedly examined and its constant or fluctuating condition be taken into account.

CYLINDRURIA.

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The subject of casts in the urine has been a favorite one for study in the clinical laboratory of the Johns Hopkins University during the past five years. In addition to such studies, this paper contains as its most important portion the report of a study of the records of all the cases of nephritis admitted to the medical wards of the Johns Hopkins Hospital, over 1,000 in number, about 500 of which came to autopsy, together with other cases clinically resembling nephritis but with no anatomic evidence I and my associates in the laboratory wish to express our indebtedness to Dr. Osler for the use of this abundant and most valuable material.

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CASTS; THEIR CLASSIFICATION AND FORMATION.

Casts have been classified as cellular, granular and amorphous. The latter show no structure, being homogeneous or at the most with only a faint striation. All combinations of and transitions between these forms occur.

(1) *Epithelial Casts.*—These are made up of, or have attached to them, renal epithelial cells; that is, cells which vary much in size but have always (when it is visible) a round nucleus. The cells are flat and polygonal as a rule, not spherical. The protoplasm is usually (always ?) very much degenerated, the cell being but a mass of fat, myelin, or albuminous granules, which may swell the cell to a great size. When these cells retain their finer structure, which is not often, they are considered to resemble those from the straight collecting tubules, not the secretory cells. An epithelial tubule could not pass a loop of Henle of normal bore, but single cells or the detritus of cells from above could attach themselves to a cast forming below. Most epithelial casts are masses of epithelial cells united by a hyaline matrix, but some are certainly desquamated portions of the tubules with the lumen, and with even the intercellular protoplasmic bridges visible. In one kidney which we have had an opportunity to study, in sections at the juncture of cortex and medulla the invaginated tube of epithelium could be beautifully seen, which, breaking loose, would be a cast. That is, at these portions were two tubes of epithelial cells, the intact one lining the tubule and an invaginated also intact interior one, evidently loosened and rolled down from above. Such perfect fragments are called "epithelial tubules." This being the origin, it is the free surface of the cell which forces outward the base lining the lumen.

All transitions between these and the coarsely granular and fatty casts are seen, and the question arises where to draw the line. In this laboratory we consider the cast epithelial if the cell outline of one cell with a round nucleus can be made out.

Also a hyaline cast with one epithelial cell attacked ranks as an epithelial cast.

We doubt, with Cabot, that all the mononuclear cells are renal; also that from study of the degenerative changes or "atrophy" of these cells any conclusions concerning the changes in the cortex can be drawn, yet we believe that the cuboid or flat polygonal cells are of renal origin.

(2) *Coarsely Granular Casts.*—All transitions between epithelial, leucocyte and these casts can be found. These are of a yellowish-brown color, very opaque, hence conspicuous objects, covered by coarse granules. Some of the granules are soluble in acetic acid, hence of albuminous nature; others are soluble in ether and take the fat stains; still others resemble the myelin of the sputum. These casts are probably either epithelial casts the cells of which have undergone degenerations, or are agglutinations of the detritus of epithelial cells which have gone to pieces in the tubule before or after desquamation.

In the laboratory we have had occasion to study another form. In cases of subacute nephritis large cells sometimes occur, two or three times the size of an ordinary renal cell, or even larger, which are masses of fat and myelin droplets and resemble colostrum corpuscles. We believe these to be of renal origin. In some cases these cells occur in rows of two or three; in others the cell divisions are indistinct, while still others form typical granular casts. Among

the coarsely granular casts are included hemoglobin casts, which are of a brownish-red color.

(3) *Fatty Casts.*—These striking objects are masses of fatty granules often preserving the outline of the original epithelial cells. They are yellowish or even blackish in appearance and soluble in ether; fatty acid crystals may project from them. The fat globules may be enormous, almost as large as a cell. They occur especially in malarial nephritis.

(4) *Finely Granular Casts.*—The term "finely granular" is indefinite. It includes casts very similar to the coarsely granular save that the granules are much finer; also many with little resemblance to these latter, since they are almost translucent, much smaller, less conspicuous, and are covered by, or have scattered over a part, very fine granules which are seen to belong to the cast and not to be a mere deposit on a hyaline cast; many of them are intermediate in appearance.

(5) *Waxy Casts* (also called colloid or amyloid).—These casts are very refractile, sharply contoured, often of a white or yellow color, homogeneous, and show a great tendency to split transversely, hence they are fissured and are often in small fragments. They may have, rarely, cellular elements attached. They show a marked tendency to spiral twisting. Two groups are present, the clear white and the yellow; the first look as if cut from paraffin, the second as if from wax. They seem to be formed of a stiff, firm, brittle material. They look broader than the hyaline casts. Some give the amyloid reaction as a whole, some in portions; more do not, and the reaction is seldom really satisfactory. Some observers deny having ever found a good amyloid cast (Cornil). They are quite resistant to acetic acid.

The name "waxy" is best since it signifies only physical properties, not chemical, as the term amyloid does.

Between this group and the hyaline casts is a very large group of casts which are perhaps the commonest of all, which have not quite the physical properties of the waxy, yet are more distinct and solid-looking than the hyaline, which name they bear. It is important to recognize that some of these have deposited on them fine granules from the urine, giving them the appearance of the finely granular cast.

(6) *Hyaline Casts.*—There are the coloid or glassy casts. They are pale, very slightly refractile, watery in appearance and difficult to see unless the light is almost shut off or unless one notices crystals or cells sticking to them. For this reason, and because they are so often few in numbers it is better to stain them with Lugol's solution, which gives a yellow color, or with gentian violet. If low light and no condenser be used, however, this is unnecessary. They give the microchemical tests of albumin. They may have the same cells attached as the other casts. They are beautifully cylindrical, with rounded ends, a uniform diameter as a rule but not always, may be either broad or very narrow, and sometimes are twisted like a corkscrew.

Hyaline casts sometimes have a fibrillar appearance and may disintegrate, in which case they resemble a Curschmann spiral in miniature; that is, these consist of spirally wound threads.

Branching casts have been described. Some taper considerably along their length. Their outline is very regular. These casts occur in all conditions, but this is the only form which follows certain disturbances in which there is no question of inflammation. They are so different in appearance from the hyaline casts just mentioned as "intermediate" that they really deserve a separate name. They are easily dissolved by acid, or alkalies, are soft, elastic, and easily destroyed by cold or heat. They are the most important to recognize since they occur so often alone. They are the first to disappear in a urine which is becoming alkaline, hence the freshly voided urine should be centrifugalized and studied on a broad slide without cover-glass, which is covered well with the urine, and using the low power. Several slides should thus be examined before the search is abandoned.

Hyaline casts seem to be the ground substance for most epithelial, pus and blood casts, and hence for most of the mixed variety; one end of such a cast may be purely hyaline.

(7) *Blood Casts.*—Blood casts are a coagulum of red blood cells which have formed within the tubules. The term is also applied to any of the above casts with red blood cells attached. Some of the blood cells are so pale that it is hard to recognize them. Many have crystals of hematoidin attached.

(8) *Hemoglobin.*—Casts of hemoglobin occur in hemoglobinuria, the hemoglobin occurring in amorphous masses. Some seem to be other casts impregnated with hemoglobin.

(9) *Fibrin Casts.*—These are rare, if even they ever occur. They are opaque, granular, longitudinally striated, often ribbon-like and twisted, often fibrillar and branched at their ends; in them are mixed fragments of blood cells and granules of pigment.

(10) *Pus Casts.*—These have a formation similar to that of the blood casts. The nuclei must be first seen and their polymorphous nature decided, to be sure it is not an epithelial cast. This may be done by adding acetic acid. Pus cells are smaller, more spherical and finely granular than the epithelial casts.

(11) *Cylindroids.*—We should prefer to separate these into two groups. The first are the so-called "mucous threads." Some are short, some are very long extending through several fields, singly or in snarls. They are flat ribbons of mucus which no one would confuse with a hyaline cast. Their diameter varies much, but on the whole they are narrower than hyaline casts. They are not cylindrical, but ribbon-like, as is well seen in their twists. Such threads make up the nubecula. They usually are branched and taper off into threads the ends of which it is almost impossible to see. They have a finely striated surface, sometimes finely granular. They do not dissolve on adding acetic acid.

(12) *Other Elements.*—In addition to these, and differing much from them in appearance, are seen elements which appear exactly like hyaline casts for the most of their length, but which at one end run off in a longer or shorter thread. They are often broader than hyaline casts, and are frequently not strictly cylindrical, but somewhat club-shaped. Those observers who are particular on this point exclude from the list of casts anything which has one end at all tapering or thread-like. These casts appear to be circular on cross section. They have not always the same fibrillar nature and are more refractile than mucus threads, hence are easily picked out in a snarl of the latter. They occur also in those circumstances in which casts would be expected and have the same significance. They occur when only a few hyaline casts are present, but a trace of albumin, and when the acetic acid precipitating body is abundant; we have often been tempted to associate them in some way with this body. We are certain that for the greater part of their length they are like typical hyaline casts, and could the fine end be broken off, as we sus-

pect is done by the centrifuge, the fragment without the tail could not be distinguished from a cast. Like the mucous threads and hyaline casts these threads may be covered by urates and hence have the appearance of granular casts. These, like hyaline casts, and differing from mucous threads, often have cells or detritus of cells attached. Chemically these bodies are like casts and are soluble in acetic acid. The point is of considerable importance, for mucous threads certainly arise from the mucous surface, while if casts they should arise in the renal parenchyma. They were first described as of the same significance as casts. It is perhaps safest to observe the old rule and exclude from the list all which have a definite tail on one end, and if, as often happens, one is in doubt to call it a cylindroid.

(13) *Combined Casts.*—These comprise nearly all the casts in most cases, and they are the hardest to classify. It is customary to call a cast with a recognizable epithelial, pus, or blood cell attached to a cellular cast, an epithelial, pus or blood cast, although many workers prefer to use the term "hyaline with leucocyte attached," etc. The most common mixed casts are hyaline and finely granular, or waxy and coarsely granular.

(14) *Bacterial Casts.*—Masses of bacteria in the shape of casts occur in purulent infectious pyelonephritis and in pyemic kidneys, but a cast also may become permeated by bacteria, either in the body or after being voided in the urine, in a remarkably short time.

(15) *Urate Casts.*—In uric acid infarcts of the kidneys of the newborn, masses of sodium urate may be found in the urine.

(16) *"Pseudo Casts."*—This term is used by some observers (Neubauer and Vogel), to mean a cast which is not a mould of the tubule, formed of some homogeneous material, hence the term included epithelial, pus and blood casts; but the term, we believe, should apply to origin, and the question is: Does it come from a tubule? It is not at all unusual for an urate sediment to assume the shape of a cast. All casts in a concentrated urine may become encrusted with urates and hence be of a dark, homogeneous granular nature. True granular casts are not homogeneous; they are coarser and more refractile than these pseudo casts which also have uneven edges and disappear on warming. Other salts forming such casts are uric acid, calcium oxalate phosphates, sodium urate and ammonium urate. Scratches on the glass are sometimes confusing.

Characteristics of Casts.—The length and the breadth of casts vary. Usually they are from .005 to .05 mm. in width. Their size may be from very small fragments to 1 mm. in length or longer. These very long casts are almost always hyaline. Some casts are almost on the limit of vision, but vegetable fibers must be excluded. Their diameter is that of the tubule. From the size of the casts no conclusions can be drawn of their source, so much does the size of the tubules vary in various conditions. It was formerly supposed that the beautiful corkscrew forms so often seen came from the convoluted tubules, but this is improbable, since any corkscrew shape would certainly be effaced during the passage through a straight tubule. Some are spiral all their length; others only at one end. This, says Senator, merely shows them to be composed of a tough, elastic material which has been squeezed through a narrow canal, or through a narrow orifice. The end of the cast is seldom split or forked.

Origin of Casts.—The origin of epithelial casts, especially of those with a lumen, is not disputed; yet they mean not necessarily a serious lesion, but merely desquamation of epithelium such as occurs from all mucosæ as the result of "catarrhal" inflammation; neither is the origin of blood and pus casts disputed. We believe these casts, the epithelial, blood and pus, to be much more common than the usual urine records would indicate, perhaps since the general belief that they indicate a rather serious condition leads one to misinterpret or to pass them by when found in some trivial condition. As a matter of fact they occur whenever there is an acute, that is a sudden, disturbance of the cells, whether inflammatory or not. The coarsely granular casts quite certainly are formed from epithelial by a granular degeneration of the cells to the waxy casts, and all transitions from the coarsely granular may be found. This transition may also occur in the leucocyte casts, but is less true of the blood casts. Such transitions are supported best by the study of sections of the kidney.

The rapidity with which waxy casts may appear, unaccompanied by epithelial and coarsely granular casts, and the transitions between them and the hyaline, lead one to suspect that they differ from the refractile hyaline in only physical properties. One explanation is that they are hyaline casts which have remained in the tubules a long time and the originally hyaline or granular substance has become waxy through "amyloid metamorphosis." The sudden appearance of waxy casts may mean merely the washing out of those long in the tubules. We do not believe that the transition from epithelial cast to coarsely granular and from these to finely granular, and then to waxy, applies in most cases, but may for some. These transitions can not be followed in the casts when these are in the urine. Against this theory may be mentioned the sudden appearance of enormous numbers of one group without a corresponding increase of the so-considered previous stages. Waxy casts may appear in great numbers in the few last hours of life; the finely granular transparent casts in their occurrence bear almost no relation to the coarsely granular, as is best seen in the Kulz sign of oncoming diabetic coma. Yet the general ideas of their origin may still be true, and some casts may depend on the disintegration of the epithelial cells, by which they are formed; this disintegration, together with abnormal secretion, occurs in the cell while it is still a part of the tubule and exposed to the toxins, etc., in the blood. That changes in the cell thus situated are sometimes rapid we are sure, but the free cell will not go to pieces nearly so rapidly as is imagined. At least the changes, whatever they are, occur in the tubules, not later. It is true that the casts show transitional forms, and that in one case two forms may be combined, but this could have been determined during the process of formation, as well as later. The importance of this intratubular determination of form is best seen in the waxy casts. These occur when the casts remain a long time in the tubules. Those in closed tubules are waxy; the casts following an oliguria are often waxy, which is seen best in cases of decapsulation of the kidneys for subacute nephritis. We can not give any better explanation for their appearance antemortem.

The origin of the hyaline casts, however, has long been in dispute, some observers claiming that they are an exudate into the tubules, others that they are a product of the secretion of the cells. These casts are certainly not coagulated fibrin, since they arise where there is no suspicion of inflammation, that is, in a practically normal kidney, as with the albuminuria of the newborn. The typical hyalines do not give the Weigert's fibrin

stain. Two sources are possible: (1) That they are formed from the coagulated albumin of the blood serum, which escapes from the glomeruli, or perhaps, when diseased, through the tubules, and coagulated possibly by a ferment from the renal cells. Cylindruria, therefore, is visible albuminuria. According to this view, the difference between hyaline and waxy casts would be the amount and rapidity of excretion of this coagulable albumin, and the time it remains in the tubules. It is an interesting idea that such albumin should coagulate, for where a certainly coagulable albumin is present, as in the case of chyluria, these casts are absent; also there is little relation between albumin and casts in amount, and either may be present without the other, yet albuminuria and cylindruria run too parallel to be independent. The one may always at least be suspected when the other is found, and in nephritis especially in their amounts they have a very definite parallelism. According to this view the materials for the casts escape some distance from the point where this material is collected and formed into a cast. (The ascending branch of the loop, the straight and the collecting tubules.) (2) Other observers (Key, Beyer, Senator, Langhans) claim that these casts originate in the epithelial cells. From sections of kidneys all steps of the process may be traced. In some cases epithelial cells die and undergo hyaline degeneration, and this substance may be molded to the cast; or the epithelium may die and allow lymph to transude into the tubule which, mixing with the cell detritus, coagulates; or (Oertel, Bartels, Rodiva, Aufrecht, Cornil, Brault) the very slightly injured epithelial cell still functioning may secrete a coagulable substance. This latter is the generally accepted idea. Some cells are seen to be swollen by globules; others have excavated edges, that is the vacuoles full of albuminous matter are discharged into the tubules and there fuse.

The origin of hemoglobin casts is interesting, since hemoglobin is soluble in the urine. It may be, however, that they represent hyaline or waxy casts impregnated with hemoglobin.

Chemistry of the Cast.—The chemistry of the cast is little studied. Probably none are fibrin. Some give an amyloid reaction when there is no such degeneration of the kidneys; amyloid disease rarely has such casts. Many react reddish to gentian violet; and brownish to Lugol's fluid.

A STUDY OF THE CASTS IN A SERIES OF CASES OF NEPHRITIS AND OTHER CONDITIONS.

We are obliged to consider other things than casts alone, albumin, etc., in this study that the picture of the cylindruria may be clearer.

Active Congestion of the Kidneys.—In one case of acute lobar pneumonia without, as yet, nephritis and with the kidneys actively congested, the weight was 425 grams, the depth of the cortex 7 mm. The urine was normal in amount, of a high specific gravity, with considerable albumin and a very few finely granular casts.

Chronic Passive Congestion.—In the urine, at first scanty, dark in color, and acid, albumin appears sooner or later in traces, although sometimes in good amount. Casts are present, chiefly hyaline, rarely granular, more rarely other varieties. A very few leucocytes may be found and still fewer red cells. The points of importance in this urine are the small amount of albumin, the large urate sediment, the comparative absence of renal epithelium, and the scarcity of granular casts and leucocytes.

Of 11 cases of extreme chronic passive congestion, chiefly heart cases, yet anatomically with no miscroscopic sign of nephritis, in 8 the clinical diagnosis of nephritis had been made. The average weight of the kidneys was 390 grams. The cortex averaged 8 mm. in thickness (7 to 10 mm.). The amount of the urine varied with the cardiac condition, being either normal or diminished in amount. The specific gravity was high, running from 1025 to 1027 in some cases, and in but 3 cases below 1015 for much of the time. Albumin was present in all cases; in one-half of them there was only a trace, but in others large amounts, even 0.6 per cent.

Casts were abundant in 3 cases and absent in but 1; as a rule they were few in number. Here in 3 cases, as in other conditions, on some days, they were present in extraordinary numbers; on other days there were few, and these chiefly of the hyaline and granular varieties, but in some cases epithelial, pus, waxy and fatty were found.

Cloudy Swelling.—Twenty-three cases were chosen which at autopsy showed extreme parenchymatous degeneration without other evidence of nephritis. Nine of these cases were of typhoid fever, 4 of pneumonia, and the rest scattered, but all fevers. In 1 case of typhoid fever the clinical diagnosis of uremia had been made.

The average weight of the kidneys was 410 gm. (250 to 590 gm.) The cortex averaged 7.5 mm. thick (5 to 12 mm.). The urine of these cases voided from one to two days before death varied in amount from 500 to 1,900 c.c. and was of a rather high specific gravity (1015 to 1028). This varied inversely as the amount. In one case the specific gravity was for several days 1004, the amount averaging 1890 c.c. In the specimens just before death, albumin was present in traces in 12 cases, much in 5, and none in 2. The albuminuria had continued in some cases for two or three weeks; in one case the first record of its presence was 34 days before death; in the other cases it appeared much later. In 2 cases examined one week before death no albumin and no casts were present.

Almost all varieties of casts were present, particularly hyaline and granular, but also blood, epithelial, and waxy. Few were present as a rule; in 3 cases large numbers. Two cases were without albumin and without casts even to the very time of death. One was a case of tertiary lues of the brain, the kidneys showing exquisite parenchymatous degeneration and the urine a specific gravity of 1008, yet even on the day of death there were no casts and no albumin. In typhoid fever cases with the bacilli present in the urine in large numbers, repeated examinations showed no casts, although a fair amount of albumin was present. As a rule, the casts appeared later than the albumin. In one they were very numerous on the last day of life. In 4 cases red blood corpuscles and epithelial cells were present.

Fatty Kidneys.—In the severe cases of fatty degeneration or infiltration of the kidneys the amount of urine is diminished, dark and cloudy, although it may be normal in amount. The urine is present in from traces to considerable amounts. The casts are chiefly hyaline and granular, some are fatty; there are a few red blood cells and a few leucocytes, although in some cases, many. There seems to be no relation between the number of casts and the amount of albumin.

We chose from our autopsies 7 cases with extreme amount of fat in the cortex and, microscopically, no other chronic change. The average weight of these

was 380 grams (250 to 530); the cortex was from 6 to 8 mm. thick. The amount of urine was normal, and the specific gravity varied from 1020 to 1024. The albumin was considerable in about one-half of the cases, and there was only a trace in the others. In no case was albumin found two weeks before death.

The casts were hyaline and granular, few or many, the number bearing no relation to the amount of albumin. In 2 cases a few red blood cells were found, and usually some pus or epithelial cells.

ACUTE NEPHRITIS.

Acute nephritis has been divided into several various groups, chiefly from the standpoint of pathology, but for the clinician a division is very difficult. Senator separates the tubular nephritis or acute parenchymatous from the acute diffuse. In the acute parenchymatous form the tubules especially are involved and the glomeruli little or not at all. The clinical symptoms are slight or none. The urine shows only slight febrile albuminuria, diminished amount of urine of rather high specific gravity, and few or no casts. The mildest grade is simple cloudy swelling and from this are all gradations to the acute diffuse nephritis. The urine contains often a heavy sediment, in some cases chiefly of renal epithelium, and hence the name "nephritis desquamativa." The epithelial cells may be single or in casts. Hyaline casts, few or many, are present. Crystals of uric acid and calcium oxalate, red blood corpuscles are often present, and hemoglobin in granular casts or masses. The leucocytes are usually few in number. The albumin is nearly always slight in amount, in remarkable contrast to the amount of sediment, and some claim that of this nearly all is nucleoalbumin from the cells.

In the acute diffuse nephritis, a good illustration of which is that following scarlet fever, the urine is diminished in amount; there may, indeed, be anuria for the first 24 hours. From 50 to 100 c.c. for the first day or so is not uncommon, but later from 200 to 500. Of 16 such cases in our series the weight of the kidneys averaged 430 grams (360 to 500), and the cortex averaged 8 mm. (It is interesting to note that the heaviest kidneys were in women.) In these cases the amount varied from 30 to 2,000 c.c., according to the stage of the nephritis. Toward death there may be a diminished or an increased voiding. The specific gravity was normal as a rule, from 1015 to 1017, but in some cases it was from 1023 to 1025 (when the urine was from 300 to 600 c.c.). It is usually of a dark color and cloudy, and blood is nearly always present, as pigment or cells.

Albumin is an almost constant feature, and yet in some severe or fatal cases there may be but traces, and this only on a few days, alternating with periods with none, even to death. As a rule it is not above 1 per cent. In the sediment may always be found red blood cells, mononuclear cells, few polynuclear leucocytes and epithelial cells from the urinary tubules, which are single or in masses, and often very fatty. Among the crystals uric acid and calcium oxalate are found, and hemoglobin, either in amorphous granules or in casts. In the hemorrhagic form of the disease in our series the red blood cells were remarkably few in number. The leucocytes were very abundant in one case of acute nephritis with multiple abscess.

Casts are present in varying amounts and may be of any form. Epithelial, hyaline and coarsely granular predominate. Blood and leucocyte casts may also be present. As a rule, the number runs parallel to the amount of albumin, yet it varies greatly from day to day, and on some days there may be enormous numbers. In one case of acute hemorrhagic nephritis with areas of complete necrosis the amount of albumin was slight, but the casts, leucocyte and granular, were in large numbers. In one case of general septicemia the albumin was in but traces on certain days, none on others, and yet blood, hyaline and leucocyte casts were found.

In mild cases, and in severe ones as they improve, the urine approaches normal. It is said that the albumin disappears last. In most cases, however, we believe that the casts are found later.

Among our cases of nephritis were 109 of the acute form. Of those patients who recovered 64 were under 45, and 17 were over 45 years of age. Thirteen unsuspected cases were found at autopsy. In eleven cases a diagnosis of acute nephritis was corrected at autopsy, 2 being unsuspected cases of large red kidney, 1 of large white kidney, 6 of subacute nephritis and 2 of the small white kidney. Twenty-six patients were admitted during the first seven days of their illness. In these cases the urinary symptoms were almost parallel with the clinical symptoms and especially with the amount of edema. The urine varied ordinarily from 200 to 300 c.c. for 24 hours, with a high specific gravity, from 1020 to 1030, those with a high specific gravity being in all cases those with much albumin. In 11 of 26 cases this was over 1020 and in 3 cases over 1030. The amount of albumin varied much, being above 1 per cent. in 1 case, above 0.5 per cent. in 6, and in traces in 5. In all of these with traces the specific gravity was under 1018. Casts of all varieties were present—hyaline, granular, epithelial, blood and pus, and waxy in but 1. The cells which were usually present were epithelial, red blood cells and pus cells. During the course of these cases in the hospital the amount of urine increased even above two liters and in 4 cases of the 25 above four liters. The albumin dropped to a trace or to none, and the casts continued, in those previously mentioned, while waxy and fatty casts also appeared. In nearly all cases in which albumin disappeared, the casts continued longer. At the end in those not doing well there was much albumin with many casts. In this series of cases the patients did much better than those admitted later in their disease. There was little difference in the course, for those appearing with traces and those with large amounts of albumin, although the difference was in favor of those with traces. These may have been admitted after the worst was over. In those patients admitted later, for instance between the seventh and fourteenth days, 12 in number, the amount of urine averaged 9.50 c.c., in 4 over 1,500, and in 1, 3 liters. The mean specific gravity was 1015, the average 1018, and the extremes 1003 and 1030. The albumin was constantly present in larger amounts than in the first series. In 6 of the 12 cases there was over 0.5 per cent., and in only 2 were traces present. The casts were hyaline and granular, but sometimes epithelial (in 5) and blood. In one case a shower of casts followed the patient's getting up from bed. In these cases the albumin lasted longer than the casts.

Thirteen patients were admitted during the third week of the disease. Five of these had only traces of albumin; others, much. There were hyaline or hyaline and granular casts in 7 cases (those with fair urine output), epithelial and blood also in the others, in which latter group are the patients with considerably diminished output of urine (in no case over 900 c.c.).

Twenty-one patients were admitted after the third week. These were either on the road to recovery or doing badly as a result of their previous poor condition. The amount of urine varied from 3 to 4 liters in six cases. In some, the amount of albumin was very large, even over 1 per cent. Nine of these patients did poorly and we have the notes of the ultimate recovery of but two. The casts were hyaline alone in 1, hyaline and granular in 6, especially the older patients, epithelial also in 8, blood also in 9, leucocyte in 3, waxy in 2.

SUBACUTE NEPHRITIS. CHRONIC PARENCHYMATOUS NEPHRITIS. CHRONIC DIFFUSE, NON-INDURATIVE NEPHRITIS. LARGE WHITE KIDNEY.

This form of subacute nephritis, which may follow an acute attack or develop without this, is characterized by its subacute course, and often by the large amount of edema and effusions usually present in the serous sacs. It occurs especially in young persons, hard workers in exposed, unhygienic surroundings, and as a result of constitutional diseases, tuberculosis, lues, malaria, especially, also alcohol. The diagnosis is usually easy from the history.

The amount of urine is always diminished, the diminution varying as the edema, and is especially small at death. At the height of the disease it varies from about 250 to 500 c.c., but as the case improves, one may void from 5 to 6 liters of a very dilute urine. The amount also is increased as the edema or the effusions begin to absorb. The reaction is faintly acid, but in some cases is alkaline even on voiding, and in all cases quickly becomes so. This makes a search for casts difficult.

This is the form in which the albumin is greatest in amount, both relatively and absolutely. The amount varies as the specific gravity and seems to bear no relation to the edema. It usually is below 1 per cent., and for months may vary from 0.4 to 0.8 per cent. In certain cases, however, it is much greater. Cases with 2 per cent. are not rare, and Bartels has reported a case in which the amount varied from 4 to 6 per cent. As the case changes to the chronic indurative form the amount of albumin becomes less and less.

The sediments are much the same as in acute nephritis but it is more common to find coarsely granular, fatty and waxy casts. Red blood cells may practically always be found in especially large numbers in the acute exacerbations. There is little difference between the urine of the white and the mottled kidneys except perhaps that in the latter there are more red blood corpuscles, leucocytes, and fatty cells.

We have studied the reports of a series of 30 cases in which microscopically only the signs of subacute nephritis were present. This is important, since the acute exacerbation of a chronic diffuse nephritis can not clinically be separated from this form. These cases may be roughly divided into those in which there are large, pale kidneys, with considerable fatty and granular degeneration of the cells but with the glomeruli little involved, those with the glomeruli much involved, and the hemorrhagic type. Of the former, of 16 cases in 12 the clinical picture was of severe nephritis. Four accompanied various severe conditions, such as septicemia, tuberculosis, typhoid fever. The kidneys were large, averaging 420 grams in weight (220-580 gms.) The cortex averaged 7 mm. (5 to 10 mm.). The urine, for the most part, was about 500 c.c. in 24 hours, with a specific gravity practically normal. The albumin in 7 cases was present in large amounts, from 0.5 to 1 per cent.; in 5 cases there were but traces. Casts were abundant in 5 cases, hyaline, granular, epithelial, waxy in 4 and fatty in 3. Epithelial, red blood cells, and leucocytes were present. In this form there was a certain disproportion between the amount of albumin and the number of casts in favor of the latter.

In 8 cases the glomerular involvement was very prominent. The kidneys averaged in weight 496 grams and the cortex 9 mm. The amount of urine was slightly greater than in the preceding cases (from 600 to 1,000 c.c.), and the specific gravity about 1020. The amount of albumin was large in 5 cases. Casts were very abundant in 4; in 2 the casts were in great numbers and the albumin was but a trace. No fatty casts were reported in this group.

One would expect that a glomerular involvement would affect particularly the amount of albumin, the tubular involvement especially the number of casts, and while in general this may be true, clinically it is of little importance since the two anatomic conditions are always present and variations are but slight.

Hemorrhagic Form.—Of the 9 cases showing this form of nephritis, in five it was part of some general disease. The kidneys averaged 465 grams. The amount of urine was normal, the specific gravity low. Albumin was present but in traces as a rule. Few casts were present but of all varieties, and in one case with but a trace of albumin, many casts.

CASES OF CHRONIC NEPHRITIS WITHOUT AUTOPSY.

These were cases of a subacute or chronic nephritis with very acute symptoms, much edema, and effusion.

It is impossible to say whether these cases were acute exacerbations of a chronic nephritis or a subacute form. We have therefore merely divided them into two groups, those under 40 (in this group a majority of the subacute cases should occur) and those above 40 years of age.

Of the patients under 40 years of age there were 129. Of these 70 could give no cause, in 10 it seemed to follow malaria, 14 exposure to cold, and 6 grippe. The others followed a variety of diseases.

There were 61 cases with much edema. In 49, or 80 per cent., the urine presented the following features: it was normal in amount and specific gravity; albumin large in amount, in 20 per cent. over 1 per cent., in 4 cases over 2, and 1 case 3.2 per cent. The casts were in enormous numbers—hyaline, granular, epithelial, fatty, waxy, pus, and blood, in all cases in number out of proportion to the amount of albumin. Among the cells are always found renal epithelium, blood, and pus. In 2 cases cholesterin crystals were found.

In 11 of the 61 cases albumin was present in but traces, and in 1 case none yet many casts.

Of the cases with little edema there were 68 patients who left the ward improved; in 44 per cent. of these the urine presented exactly the same features as the 49 cases above described. Of the rest, in 38 but a trace of albumin was present, in 3 above 1 per cent. Of these in 15 per cent. of the cases the casts disappeared before the albumin and the disproportion was not so great between the two. Yet the relation between the two must depend on the nature of the process, and not its chronicity, since in exactly the same percentage of the cases with a history of less than 6 months' illness did the casts disappear before the albumin as in the much more chronic cases. In this group were also 10 fatal cases. Of these, in 3

there was but a trace or no albumin at the end, in 7 cases more than 0.2 per cent., in 1 case 1.1 per cent.

Subacute Nephritis (or Acute Exacerbations) in Patients Over 40 Years Old.—Of these, excepting the fatal, there were 45 cases. In 28, the first symptom had occurred within six months of admission; in 7, between 6 and 12 months, and in 10, anywhere from 1 to 35 years. No clinical division of this group was possible, hence we group them according to the urine into the following groups:

Cases with a trace of albumin, the amount and specific gravity practically normal; albumin but a trace, and casts only hyaline and granular; cases with a measurable amount, but under 0.2 per cent.; the casts were of many varieties, hyaline, granular, epithelial, waxy and blood casts were found; and cases, in which there was still more albumin, all kinds of casts were present, including many epithelial, fatty and waxy. In these last cases the casts were sometimes in the background, while in 1 case of leutic nephritis with 2.2 per cent. in many records no casts were found at all. In other cases, all kinds and many were found. In addition to these, there were 10 fatal cases; 4 of the patients died with traces of albumin; of these 1 had enormous numbers of casts, all granular and hyaline; 2 had few casts. In 4 the albumin was greater in amount, the casts either hyaline or hyaline and granular, and in 2 cases none. In 2 cases there was over 0.2 per cent. albumin, with hyaline and granular casts.

CHRONIC INTERSTITIAL NEPHRITIS.

Chronic interstitial nephritis, even in advanced cases is marked by its very insidious course. Its only symptom may be a slight albuminuria, and this may be absent over long periods. Later the albumin becomes permanent, casts appear, and later polyuria. The urine is increased slightly at first, but in a well-developed case from 2 to 3 liters are voided daily, and rarely even as high as 12. On the other hand the amount may at times sink to normal and even under. It is pale, clear, definitely acid, and of a specific gravity which is constantly between 1010 and 1005. This low specific gravity of a morning urine is always significant of this condition. The molecular concentration is diminished. The albumin seldom rises above .05 per cent. and usually is in mere traces. Casts are few. They are often absent in the morning voiding and may, indeed, be present only after a day of unusual exercise, or an especially hearty meal or some unusual excitement.

Of arteriosclerotic kidneys the urine contains the faint trace of albumin which occurs late and is often intermittent. Cases of the so-called contracted kidneys, particularly those albumin-free, belong here. The sediment is scanty and difficult to find. The urine should be centrifugalized and search made in large amounts of urine. After a long search but one or two casts may be found, usually hyaline, although sometimes a finely granular. Renal epithelium is sometimes found, a few leucocytes, rarely a red cell, and yet many after overexertion, etc. Uric acid and calcium oxalate crystals are common.

During acute exacerbations the urine often loses this character entirely, and it may be very difficult to distinguish the condition from acute nephritis. It is well to examine the morning and the evening urines separately, and especially after a day with a particularly hearty meal or severe exercise During the whole course the urine in this condition resembles that found in other conditions so nearly that the clinical history and the physical examination of the patient can not be dispensed with. The urine alone, for instance, may resemble the acute or the subacute nephritis during convalescence, waxy kidney, and the cyclic, or the so-called physiologic, albuminurias.

A division of this form into groups is exceedingly difficult; in fact, the size and color of the kidney is almost the only criterion since in nearly every case all its histologic elements are affected by degenerative, inflammatory and regenerative processes. This form of nephritis is of almost physiologic occurrence in every elderly person, the kidney becoming old with the rest of the body, and therefore slightly sclerotic. If the process, however, is simply sclerosis there should be no urinary symptoms, and hence such cases are not suspected before the autopsy. As a result of hard work, worry, various diseases as gout and lues, and certain poisons like lead and alcohol, there is degeneration of the epithelial elements and inflammation, resulting in a new growth of connective tissue, which may be general or focal, subcortical or periglomerular. The kidney becomes hard and firm, diminishes in size, and finally may be but a remnant of an organ.

In some cases contracted kidneys are found at autopsy which could not possibly have been recognized clinically from the urine. These show that a nephritis limited to foci can heal. In all such cases if it be the sclerotic process which predominates there may be practically no urinary symptoms, and at autopsy kidneys of surprisingly small size have been found. Other cases are the result of a preceding acute or subacute nephritis. The only classification which can be made, apart from the weight of the kidney and the thickness of its cortex, is according to color, hence the division into red and white kidneys, the red kidneys being the result particularly of arteriosclerosis as a primary factor. The red kidneys are large, firm, beefy, the sclerosis is considerable and yet the size of the kidney is seldom as much diminished as in the white form.

CHRONIC INDURATIVE (INTERSTITIAL) NEPHRITIS. CHRONIC DIFFUSE NEPHRITIS. WHITE KIDNEY.

Of these we have had 174 cases with autopsy. In all the following pages by weight is meant that of both kidneys.

Kidneys Over 300 Grams in Weight.—In this group are 79 cases. Of these, in 38 there was no acute renal process. The condition in some was found accidentally at autopsy on a patient dying of some other disease. The weight of these kidneys averaged 330 grams, and the cortex averaged 6 mm.

The amount of urine was practically normal, as also the specific gravity. Albumin was present in traces as a rule (26 cases). In 10 cases, however, it was present in abundance. In 5 cases on some days there would be a trace of albumin, on other days none, while in 1 case no albumin was ever found.

The casts were hyaline and granular, very rarely fatty and epithelial. In 16 cases no casts were ever found. We would emphasize the fact that 5 of these 16 were cases of carcinoma, 3 of arteriosclerosis. In 7 cases the casts were in large number. In the sediment, also, were leucocytes, epithelial cells and red blood corpuscles. In the former admissions or at the entrance to the hospital it is the rule that neither casts nor albumin were present or but a trace of albumin without casts.

In 41 cases the kidneys showed also an acute process, in some only a fatty or a parenchymatous degeneration. The average weight was 380 grams; in one case, and that

a woman, 720. The cortex averaged 7 mm. Much albumin and many casts were present in 5 cases; a trace of albumin with many casts in 2, with few casts in 14, with none in 11. No albumin but casts were found in 4, and neither albumin nor casts in 2. One of these cases is interesting, since it was of pulmonary tuberculosis with extreme parenchymatous renal degeneration; the urine of the 24 hours preceding death, however, contained neither albumin nor casts. The other was a case of septicemia. The casts were hyaline and granular, in some epithelial, blood or pus.

In 4 cases the acute element was shown by the hemorrhages present.

There were 18 cases in which there was considerable edema and in which the symptoms of nephritis were prominent. These kidneys averaged 390 grams in weight; the cortex measured 6 mm. Here also the amount of urine was practically normal, the specific gravity rather low from 1006 to 1018. The albumin was present in a trace in 7 cases, much in 5. Casts were few as a rule, the most were hyaline and granular, but there were some fatty and waxy casts. Red blood cells, leucocytes, and epithelial cells were also present. In 7 such cases without edema, with a clinical diagnosis of nephritis, the urinary symptoms were practically the same as of those with much edema.

There were 4 cases in which the hyaline degeneration of the epithelial cells was a striking point. It is interesting to note that in one such case casts were never present, but there was much albumin. In one case there were a great many waxy casts and few other forms. In a third case there was much albumin, with granular and hyaline casts, while in a fourth there was only a trace of albumin and no casts.

Kidneys Weighing from 200 to 300 Grams.—There were 57 such cases. Among them was an interesting group of 7 cases accompanying malignant disease. The average weight of these 7 pairs of kidneys was 220 grams; the cortex averaged 6 mm. The urine, both in amount and specific gravity, was practically normal. In all these cases albumin was present if at all, in traces, and in 4 cases it was present only at times, while casts were remarkably few; in 3 cases none were found. The others showed only hyaline and granular casts. In one case, however, there were very many hyalines and granulars; in another on one occasion none, on another many granulars. In this group, therefore, the casts were absent or present in large numbers. In 2 cases with very fat cortices there were no casts.

Tuberculosis: There were six cases; the average weight of the kidney was 257 grams; cortex was 6 mm. thick. Here also only traces of albumin were present in 3, none in 2, and casts few or none. There were few casts in 1, none in 4 cases. In 1 case some time before death many casts had been found. In all only hyaline and granular casts were found.

In 18 cases the nephritis was either an accidental discovery or accompanied some more important condition. The average weight of the kidneys was 260 grams; the cortex measured 5 mm. The amount and specific gravity of the urine were practically normal. The albumin in 10 cases was present in a trace, in 5 cases in abundance, while in 3 none was found. Hyaline, granular, epithelial, pus and waxy casts were found in these cases and mixed casts were common.

In 4 cases no casts were found; in a case of hemophilia there was neither albumin nor casts; in 2 cases with very fatty kidneys much albumin and many casts were present; in another case running a slight fever much albumin and many hyaline and granular casts were found.

In this group, further, were 25 cases with definite symptoms of nephritis. In these cases the average weight of the kidneys was about 260 grams, and the cortex measured from 4 to 5 mm. in thickness. The urine was practically normal in amount and specific gravity, although there was a tendency for the latter to be below normal. The albumin varied much, from a trace to even 0.5 per cent. and was present in all cases. The casts were of all varieties, the most hyaline and granular, in two cases there were many; waxy casts were found in 3 and epithelial in 1. As a rule, the casts were few in number; in 4 cases they were many. These cases gave a long history of nephritis. Many of these patients were in the hospital on several occasions. There was a remarkable discrepancy between the amount of albumin and the number of casts.

Kidneys of from 150 to 200 Grams in Weight.—Of these 30 cases, in 7 the average combined weight was 180 grams, and the cortex from 2 to 5 mm. The amount of urine was normal, but the specific gravity in all cases was slightly low—from 1008 to 1014. Albumin was present in traces, if at all. The casts were few in number—hyaline and granular, or none. These 7 cases were not diagnosed clinically as nephritis.

In 11 cases with edema and in 11 cases without edema the clinical diagnosis was nephritis. The weight of the kidneys averaged 180 grams. In both groups, the cortex averaged 3 mm. The amount of the urine of both groups was normal; the specific gravity low, as a rule, in some cases normal. The amount of albumin varied greatly, from a trace to 0.7 per cent. Casts were present in great variety and numbers; in some cases there were many and all forms; in some none. Red blood cells were commonly present. It should be borne in mind that all these cases mentioned with a clinical diagnosis of nephritis were acute exacerbations of a chronic form. From the urine alone, however, such a diagnosis could not be made.

In those cases with much edema the casts were abundant in 3 cases, very few in 3, while in those with little edema none were found in 5 cases and many in but one. In this latter group only hyaline and granular casts were mentioned; in the former all varieties in some cases.

Kidneys Below 150 Grams in Weight.—Of these, there were 8 cases; the sum of both kidneys averaging 180 grams and the cortex measuring from 2 to 4 mm. The urine was either normal in amount or slightly diminished. The specific gravity was often low, but sometimes normal. The amount of albumin was a trace in 6 cases and a larger amount in 2. The casts were chiefly hyaline and granular, with epithelial in 3 cases and waxy in 2. In 4 cases casts were very scanty and at times not found.

Such were the terminal urinary features of cases which commonly pass as small contracted kidney and of which the classical urinary symptoms are quite different from the above. Polyuria is one of the first complaints; the patient rises at night several times to void urine of a light yellow color, with no gross sediment; the specific gravity is constantly low, varying from 1005 to 1012. Albumin is present in traces with intermissions of none for periods of from a few days to months. In the sediment very few cells and casts are found. For the latter it may be necessary to centrifugalize and to examine a large amount. The casts will be of a hyaline or finely granular nature. It is interesting to note how many of

these specimens of urine have a few red blood cells in the sediment. Functionally the kidney is almost perfect. Later, however, and this includes all the cases mentioned, the kidneys are the seat of an acute process, the amount of urine diminishes, the specific gravity rises and albumin and sediment increase so that from the urine alone one would suspect an acute exacerbation of an acute nephritis in a kidney of much greater weight than he finds at autopsy. In certain other cases, however, in which it is not the renal symptoms which predominate at death, the amount of urine may grow larger and larger until a permanent catheter is necessary, the patient dying in uremia.

In 7 of these cases hyalin was present in the capillaries. In one, with combined weight 155 grams, albumin was 0.3 per cent., casts small in number, and when present hyaline and granular. In one of 220 grams' weight the albumin was 1.2 per cent. and the casts in large numbers, hyaline, granular and especially waxy and fatty.

(To be continued.)

[THE REMAINDER OF THIS SYMPOSIUM ON NEPHRITIS, INCLUDING THE DISCUSSION, WILL BE PUBLISHED NEXT WEEK.]

A STUDY OF BRAIN INFECTIONS WITH THE PNEUMOCOCCUS.*

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Following is a report of twelve cases of human brain infection with the pneumococcus, together with the results of inoculation of the pneumococcus in the brains of guinea-pigs. Both the human and the experimental material have been used to establish the order and time relations of the acute inflammatory changes. The work is on the lines of our study of encephalitis due to the *Staphylococcus pyogenes aureus*,[1] but was particularly suggested by the case of pneumococcus brain infection (here abstracted as Case 1) reported by Bullard and Sims[2] from this laboratory in 1904.

Profs. W. T. Councilman and F. B. Mallory have looked over the work. On the bacteriologic side we have been much aided by Drs. C. W. Duval and P. A. Lewis, of the hospital staff. We wish to thank Drs. J. H. McCollom, A. L. Mason, G. B. Shattuck, F. H. Williams, C. F. Withington, G. G. Sears, E. M. Holmes, and G. A. Leland for their clinical notes, and Drs. F. B. Mallory, J. H. Pratt, A. R. Diefendorf, H. C. Low, H. A. Christian, R. L. Thompson, S. B. Wolbach, C. W. Duval, P. A. Lewis, and E. B. Bigelow for their autopsy records. We are ourselves responsible for the histologic work.

CASE 1.—This was a case of severe bronchitis in a man of 50 with venereal and alcoholic history.

Clinical Summary.—Cerebral symptoms developed after a month's illness, ushered in by increasing weakness, fever and mild delirium (symptoms on admission). Two days later there appeared flaccid paralysis of the left extremities, with some rigidity on the right, cyanosis, and incontinence. There was gradual failure, with rapid respirations, raised temperature, deepening coma, and death on the seventh day.

Anatomic Summary.—There was acute purulent bronchitis with edema, softening and punctiform hemorrhage involving the greater part of the right cerebral projection system with foci in the left centrum semiovale.

Microscopic Findings.—There were pneumococcus septicemia, slight arteriosclerosis affecting all the organs, acute bronchopneumonia, extensive diffuse encephalitis with hemorrhages and cellular lesions related to the cortical vascular system and confined to the subcortical region. The lesions consisted of accumulations within and surrounding the adventitia of large numbers of mononuclear cells (granule cells), and small numbers of lymphoid and plasma cells, with a few polynuclear neutrophile cells and a few eosinophiles.

There were solution and fatty change of the myelin in the surrounding tissue, and hyperplasia and proliferation of neuroglia cells with formation of numerous astrocytes. There were edema changes in the nerve cells of the cortex, fatty changes in the cord, and early central chromatolysis of the anterior horn cells.

Lanceolate diplococci were present in cultures and were found in and surrounding the cells of the exudate in the lung lesions and in the tissue and granule cells of the brain.

CASE 2.—H. H., a boy of 10, was admitted to Dr. J. H. McCollom's service at the south department of the Boston City Hospital, July 13, 1898.

History.—He had measles and whooping cough at 5, mumps at 8 years of age. He was well the day before entrance. He ate a heavy lunch before bedtime, and had headache and vomiting during the night. He "slept" till next afternoon, when respirations became stertorous. The boy was admitted to the hospital in coma, with stertorous and labored breathing, profuse nasal discharge, dilated pupils not reacting to light, râles throughout the chest, small, high tension, rapid pulse, tense and prominent abdomen, exaggerated patellar and plantar reflexes, anesthesia of extremities and marked muscular snsibility to pain. He was catheterized and the urine showed a large trace of albumin. The coma continued. The patient vomited twice. Death occurred about one hour after midnight.

Clinical Summary.—A boy of 10 goes to bed one evening after a heavy lunch, vomits and has headache in the night, sleeps all day, is admitted to hospital in coma and dies twelve hours later, less than twenty-eight hours after the onset of the symptoms.

Anatomic Findings.—The autopsy, performed by Dr. F. B. Mallory, July 14, 1898, showed: Pia injected and edematous; no increase of fluid in ventricles. Small areas of hemorrhage and beginning softening were found in the cerebral cortex beneath the olfactory lobes, along the inner side of the right temporal lobe, and in the right side of the pons. No area exceeded 1 cm. in diameter.

Anatomic Diagnoses.—Pneumonia in middle lobe of right lung and base of left lower lobe. Petechial hemorrhages in skin over chest. Hemorrhages in mucous membrane of bladder. Hemorrhages in cerebral cortex.

Microscopic Findings.—Cultures from the brain and kidney showed a variety of organisms, including the pneumococcus; from lung, pneumococcus; from heart's blood, liver and spleen, sterile.

The pia mater over the areas of softening showed considerable edema, with polynuclear leucocytes and mononuclear cells in about equal numbers. Leucocytes wandered freely through the cerebral tissue. The subpial layer of neuroglia was thin. The areas of softening consisted of small hemorrhages, with polynuclear leucocytes, some of which contained numerous lanceolate diplococci. In some cases the free blood was confined to the adventitial clefts. Lesions of the arteries were rare. The walls of the small veins were sometimes obscured by masses of leucocytes; but there was no thrombosis or lifting of endothelium by exudate.

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* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

* From the Pathological Laboratory of the Boston City Hospital.

1. "A Study of Acute Hemorrhagic Encephalitis (Staphylococcus pyogenes aureus)." E. E. Southard and C. W. Keene, Amer. Jour. of Med. Sci., March, 1905.

2. "A Case of Diffuse Encephalitis Showing the Pneumococcus." W. N. Bullard and F. R. Sims, Boston Med. and Surg. Jour., December, 1904.

CASE 3.—W. B., a man of 70, was admitted to Dr. G. G. Sears' service at the Boston City Hospital, Sept. 26, 1898.

History.—Three or more days before admission his face had begun to swell, burn and itch, and the lids swelled so that he could not see. Temperature was 101 F. He was slightly delirious, but could be aroused to complain of swelling ankles, shortness of breath, palpitation and dizziness. He was said to have had "shocks" eight years and one year ago. Thorax, abdomen and extremities were negative. The urine showed a trace of albumin and numerous fine granular casts, with a few cellular elements. The patient died four days later. He fell out of bed during delirium the night of entrance and cut a gash in the left occiput. The delirium continued. Three days after entrance the temperature began to rise and the pulse to fail, the respirations became stertorous. Death followed the next morning.

Clinical Summary.—Man of 70, with heart symptoms and kidney disease and a history of paralytic shocks, dies in delirium a week or more after the onset of facial erysipelas.

Anatomic Findings.—The autopsy, performed by Dr. J. H. Pratt, Sept. 30, 1898, showed:

Dura distended over cortex and convolutions flattened. Beneath the dura over the left parietal lobe there was a thin layer of coagulated blood. On the cortex beneath the arachnoid were scattered areas of greenish purulent exudate, especially marked over the frontal lobes, and also over the cerebellum. The base was not involved. The ventricles were dilated, and contained a small amount of clear serous fluid. The walls were not softened.

Anatomic Diagnoses.—Acute purulent meningitis. Old tuberculous focus in lung. Edema and congestion of lungs. Acute bronchitis. Chronic obliterative appendicitis. Chronic interstitial nephritis. Coronary endarteritis. General arteriosclerosis. Chronic interstitial orchitis.

Microscopic Findings.—Cultures from heart's blood, liver, meninges and lateral ventricles showed pneumococcus. Spleen and kidneys were sterile. Sections of cortex presented a constant picture. The exudate consisted of polynuclear leucocytes and mononuclear cells (proportion between 5 and 10 to 1) free in the pial spaces. A few spaces in the middle zone of the pia contained only granular coagulum. Much round-meshed fibrin was deposited in small foci about the small veins and along the inner zone of the pia. The elastica of the small arteries was penetrated by the polynuclear cells, which lay in spaces beneath the endothelium (or in clefts of the elastica) together with mononuclear cells.

The layer of subpial glia was dense and fine-meshed. Eccentrically swollen glia cells, with a small number of embracing fibrils, were frequent. There were a few polynuclear leucocytes in the nerve-cell layers, as a rule near capillaries.

CASE 4.—T. W., a man of 44, was admitted to Dr. G. B. Shattuck's service at the Boston City Hospital Oct. 29, 1898.

History.—He had breakbone fever in Baltimore at the age of 19. Right chest was tapped for pleurisy one year before entrance. There was severe pain in the lower left chest four days before entrance. There were cough, orthopnea, insomnia and sweating. At entrance there were signs of effusion in the left chest; there were two dry taps. About twelve days after admission, the patient began to have severe cough and irregular temperature, with persistence of signs in chest and increasing pallor. Two days later he complained of pains in the eyes and severe headache and became semicomatose. The area of bronchial breathing increased. A friction-like murmur developed in the lower heart area. Death occurred November 14, without recovery from coma.

Clinical Summary.—Man of 44, with history of pleurisy of a year's standing, develops a fresh attack, in the course of which, sixteen days after onset, twelve days after admission to hospital, he became much worse. There were pains in the eyes, headache, coma. Death occurred three weeks after onset of symptoms and four days after exacerbation of symptoms.

Anatomic Findings.—The autopsy, performed by Drs. J. H. Pratt and Diefendorf, Nov. 14, 1898, three hours after death, showed:

Head (Dr. Diefendorf): Pia showed over vertex and base a slight haziness, and along longitudinal fissure on both hemispheres, several areas from 1 to 3 cm. in diameter, greenish yellow in color, on section showing thickness of from 1 to 4 mm., not exuding but rather firm. A few similar areas were scattered in the sulci over the frontal and parietal lobes. A similar but more extensive exudate was found in the interpeduncular space, along the ventral surface of pons and medulla, and at the lateral margins of cerebellum.

Brain tissue was firm. On section a greenish yellow exudate was found in the posterior horns of the latter ventricles, and in the floor of the third ventricle. Ependyma elsewhere was clear. Vessels at base were negative. Middle ears were normal.

Cord: On puncture of the dura of the lumbar cord there escaped a clear fluid with several patches of greenish yellow color. This exudate was found along the entire extent of the cord on the right posterior aspect, mostly in flakes, but in places as a rather thick layer, 1x2 cm. in breadth and length, and 5 mm. in thickness.

Anatomic Diagnoses.—Acute purulent cerebrospinal meningitis. Fibrinopurulent encysted pleurisy. Serofibrinous pericarditis. Chronic verrucose endocarditis. Old fibrous obliterative pleurisy. Hydrocele. Parenchymatous degeneration of liver and kidney. Fatty degeneration of kidney. Fatty degeneration of aorta. Acute fibrinopurulent mediastinitis.

Microscopic Findings.—Cultures from heart's blood, pericardium, pleura and meninges, showed pneumococcus. Spleen and liver gave *B. coli;* kidney was negative.

The meningeal exudate varied in different places in the proportion of polynuclear leucocytes to mononuclear cells. Everywere there were more mononuclear cells than leucocytes. In the wide sulcal space the chief cell found was the phagocyte laden with polynuclear leucocytes. There was little fibrin except near the veins. Vascular lesions were not prominent over the cerebrum and cerebellum, but lifting of endothelium by exudative cells was found in the small vessels of the spinal pia mater.

The subpial glia was coarse, even and regular. Behind the fibrillar layer were numerous eccentrically swollen glia cells, often with two or even three nuclei. Some of these cells showed fibrillæ in close apposition to processes. Leucocytes penetrated the cortex somewhat freely and occurred singly in the deeper nerve-cell layers.

CASE 5.—R. A. a man of 35, was admitted to Dr. A. L. Mason's service at the Boston City Hospital, April 15, 1900.

History.—Chills and cough with yellowish-white sputum had set in six days before entrance. There were pain in the right chest, rise of temperature and free perspiration. He had been in bed four days. He was admitted in delirium, with rusty sputum and with signs of pneumonia in the right chest. Knee jerks and plantar reflexes were normal. There was inflammation of the skin about the shoulders. On April 17 the right forefinger became inflamed and the swelling spread to the dorsum of the hand. An incision was made and pus withdrawn. By April 22, the morning temperature had become normal, but began to rise again irregularly. On the afternoon of April 25 the patient suddenly became much worse, coughed spasmodically and showed dyspnea, cyanosis and delirium. There was stiffness of the neck without retraction. Meantime the inflammation in the hand had largely subsided. The next day Cheyne-Stokes respiration set in, the pupils dilated, the knee jerks became slight and the plantar reflex was lost on the right side. Death occurred in less than twenty-four hours after exacerbation of the symptoms.

Clinical Summary.—Man of 35, with history of excess in alcohol, shows signs of pneumonia in the right chest. Two days after admission (eight days after onset of symptoms) inflammation of right forefinger and hand set in. Incisions were made to relieve the swelling and were followed by general improvement. Sixteen days after onset of symptoms and ten days after admission, a sudden relapse occurred, with spasmodic cough, stiffness of neck and delirium. Death occurred the next day.

Anatomic Findings.—The autopsy, performed by Dr. H. C. Low April 27, 1900, showed:

No congestion of the dura which was not adherent or thickened. The sinuses were distended by fluid blood. The pia was rather opaque, and between it and the brain a greenish-yellow material, thick and viscid in appearance, was visible.

The veins were very much congested. This appearance was most pronounced on either side of the median line, decreasing toward the sides and on the inner surface of the frontal lobes, where it was marked only along the course of the vessels. The vessels at the base were congested and the entire cerebellum was covered by the exudation. The ventricles did not contain an excess of fluid, but the fluid in the lateral ventricles was slightly opaque. Middle ears were normal.

Anatomic Diagnoses.—Acute purulent meningitis. Acute pericarditis. Acute splenitis. Organizing lobar pneumonia. Acute endocarditis (aortic). Septic wound of hand. Ascites. Acute fibrinous pleurisy. Acute bronchitis.

Microscopic Findings.—Cultures from heart's blood, left lateral ventricle and lungs, showed pneumococcus. The right lung showed streptococcus. Spleen, liver, gall bladder and kidney were sterile. The picture varied in different parts of the pia mater. The zone adjacent to the nerve tissue, the perivascular region and certain spaces in the middle third of the pia mater contained much fibrin and polynuclear leucocytes which far outnumbered the mononuclear cells. In the wide sulcal space the mononuclear cells equalled or excelled the leucocytes in number. The large sulcal veins showed infiltration of the intima, with polynuclear leucocytes and extensive increase in the intimal cells. The subpial glia was scanty. A few glia cells with two nuclei occurred; there was no increase in fibrils. Polynuclear leucocytes were found about the small vessels, singly free in the cortex, but seldom in the underlying white matter.

CASE 6.—J. H., a man of 47, a teamster and a drunkard, was admitted to Dr. G. G. Sears' service at the Boston City Hospital, Jan. 6, 1901.

History.—Four days before entrance to hospital he fell on his back, but was able to move about afterward, though drunk. He took to bed for a short while. He complained two days before entrance of pain in the head and back of the neck. He ate nothing for twenty-four hours before entrance. At entrance there was delirium, restlessness and tremor of extended fingers. Pupils were equal, with normal light reaction. Knee jerks were lively. The urine showed .25 albumin and many (chiefly granular and epithelial) casts. Physical examination was chiefly negative. The next day deep coma had set in and death occurred January 8.

Clinical Summary.—Man of 47, dies in coma seven days after a fall.

Anatomic Findings.—The autopsy, performed by Dr. H. A. Christian, Jan. 9, 1901, showed:

Head: Dura is very tense. When opened there was a gush of grayish turbid fluid, and the dura collapsed to a considerable extent. The surface of the cerebrum and cerebellum was covered with greenish-yellow pus and fibrin. This was everywhere most marked along the course of the larger blood vessels, which appeared as dark red stripes bordered with greenish yellow. It was most prominent over the vertex of the cerebrum, along the Sylvian fissure, over the superior surface of the cerebellum and at the base in the area bounded by the circle of Willis, and along the olfactory nerves. The exudate was less abundant at the base than at the vertex. Over the convolutions where the exudate was thin, many small injected blood vessels could be seen. The superior longitudinal, lateral and superior and inferior petrosal sinuses contained fluid blood and were normal.

Smears from the exudate showed pus cells and many diplococci, some lanceolate, and a few large bacilli. Many of these were within the pus cells. The diplococci failed to show definite capsules when stained by Welch's method, though they were indicated in some places. The organisms stained by Gram's method. The middle ears were normal.

Spinal cord: Dura was normal, but distended. Over the posterior surface of the cord there was much yellowish pus and fibrin similar to that on the surface of the brain. Over the posterior surface of the cord the long spinal vessels were much distended, appearing as small sinuous red cords.

Anatomic Diagnoses.—Chronic fibrous pleuritis. Chronic fibrous pericarditis (milk patches). Hypertrophy and dilatation of heart. Fatty degeneration of heart. One accessory coronary artery. Congestion and edema of lungs. Chronic passive congestion of liver. Acute nephritis. Hydrocele and varicocele. Slight chronic aortitis. Fatty degeneration of skeletal muscles. Acute cerebrospinal leptomeningitis.

Microscopic Findings.—Cultures from pia mater gave pneumococcus pure. The kidney gave pneumococcus and *Staphylococcus pyogenes aureus.* The lung contained streptococcus, *Staphylococcus aureus* and *B. proteus.* Liver and spleen were sterile. The meningeal exudate was evenly cellular, except about the veins near the nerve tissue where fibrin was developed. The cells were almost all polynuclear leucocytes. In the adventitiæ of the veins, however, the proportion of mononuclear cells rose to 1 in 10 or 20. In the veins there were numerous minute mural thrombi, largely covered in by endothelium. The subpial glia was thin, but close-meshed. The outer layers of cortex contained numerous neuroglia fibrils of fine, even diameter. There were a few free leucocytes in the outer layers, caught singly sometimes in ameboid shapes. Mitoses regarded as in neuroglia cells occurred in the subpial layer internal to the dense sheet of fibrillæ, also occasionally in the layer of small pyramids. The nerve cells were pigmented. Cells occupying the site of satellite cells were caught in mitosis in several places; but in general there was slight evidence of increase in number of these cells.

CASE 7.—W. N., a man of 58, was admitted to Dr. F. H. Williams' service at the Boston City Hospital, Jan. 21, 1901.

History.—He had had cough and expectoration six or seven weeks before entrance. Chills and backache set in 6 days before entrance. He had had headache for 4 days before entrance. At entrance there were shooting pains in various parts of the body, skin and scleræ were a little yellow, and ears and lips a little cyanotic. The pupils were small and slightly irregular, reacting sluggishly to light. There was radial arteriosclerosis. Emphysema was present and râles more marked at right base; there were also an area of dulness, increased fremitus, and bronchial breathing at the right base. The abdomen was rigid and tympanitic. The knee jerks and plantar reflexes were normal. The discomfort from the pain in the side, distension of abdomen, and frequent catheterization persisted till January 24, when late in the evening the pulse became thready, respiration labored, and the skin cyanotic. Death occurred five hours later, January 25.

Clinical Summary.—Man of 58, arteriosclerotic, with history of six or seven weeks' bronchitis, and less than a week of chills, backache and headache, dies three days after entrance in the course of pneumonia of the right side.

Anatomic Findings.—The autopsy, performed by Dr. H. A. Christian, Jan. 26, 1901, showed:

Head: Superior longitudinal sinuses were normal. The surface of the cerebrum and cerebellum was greenish, opaque and gelatinous, and dotted with numerous whitish areas about 1 mm. in diameter. The pia was thickened everywhere over the upper surface and tore with some difficulty. Smears made from under surface of the pia showed many pus cells and Gram staining diplococci. Many of the diplococci were lanceolate and when stained by Welch's method showed fairly distinct capsules. The ventricles contained a small amount of normal fluid. The brain substance appeared normal. The middle ears were normal.

Anatomic Diagnoses.—Acute leptomeningitis. Jaundice (universal). Chronic fibrous pleuritis. Acute serofibrinous pleuritis. Fatty degeneration and brown atrophy of heart. Lobar pneumonia. Acute bronchitis. Acute degeneration of kidney. Slight chronic aortitis.

Microscopic Findings.—Cultures from the under surface of pia mater, lung, liver and kidney showed pneumococcus. The meninges were wide, but contained few exudative cells except in the inner zone and about the veins. In both regions the mononuclear cells surpassed the polynuclear leucocytes in number. In the inner zone of the pia there was considerable fibrin inclosing leucocytes, many of which stain poorly. The mononuclear cells in the adventitiæ of the veins frequently had nuclei indented on one side. The intimal cells of the arteries and veins were swollen and increased in number. An occasional arteriole had its lumen seven-eighths narrowed by swollen intimal cells.

The subpial layer showed a thin, dense sheet of neuroglia. The cortex showed numerous fibrils as far inward as the outer limits of the layer of large pyramidal cells. Scattered through

the cortex were neuroglia cells containing pigment. There was a slight increase of glia fibrils in parts of the underlying white matter. The neuroglia cells failed to show acute changes. The vessels of the cortex were engorged with blood. In their sheaths were a few mononuclear cells, but seldom a polynuclear leucocyte. The nerve cells stained well, were often overpigmented, and were attended by numerous satellite cells, some of which showed a tendency to be metachromatic.

CASE 8.—W. M., a man of 37, was admitted to Dr. C. F. Withington's service at the Boston City Hospital, Feb. 26, 1903.

History.—He had had chills, fever, pain in left chest, cough, and dark expectoration for a week before entrance. There were pneumonia and pleurisy on the left side. Pupils were normal. Knee jerks were normal. The plantar reflexes were exaggerated. The urine showed a few hyaline casts. Death occurred the day after entrance.

Clinical Summary.—Man of 37, with history of "bronchitis" for years, dies one day after entrance to hospital, eight days after onset of symptoms of pneumonia of left side.

Anatomic Findings.—The autopsy, performed by Dr. E. E. Southard, Feb. 28, 1903, showed:

Head: Dura was tense and of normal color. Arachnoidal villi were moderately developed. The pia was of a green-gray color, more marked over the frontoparietal and cerebellar regions and at the base. The greenish color in places was obscured by edema, which in the parietal and occipital regions was marked. There were pneumococci in the smear from the exudate. The convolutions were not markedly flattened. The ventricles were normal and contained a normal amount of fluid. Substance in the gross was normal. The sinuses contained fluid blood and long shreds of chicken-fat clot. The middle ears were normal.

Anatomic Diagnoses.—Lobar pneumonia (gray hepatization). Acute leptomeningitis. Acute fibrinopurulent pericarditis. Chronic adhesive pleuritis. Chronic adhesive pericarditis. General arteriosclerosis.

Microscopic Findings.—Cultures from heart's blood, lung, spleen and brain showed pneumococcus. The exudate in the pia mater was chiefly cellular, but in certain wide spaces in the middle zone it consisted of a granular coagulum. About the small veins and along the inner zone considerable fibrin was developed. The cells were mainly polynuclear leucocytes; but mononuclear cells occurred in the proportion of 1 to 10 or 20, or in a lesser proportion. The small veins showed an increase of intimal cells in compact layers penetrated by polynuclear leucocytes. The small arteries had their intimæ lifted by polynuclear leucocytes and mononuclear cells. The subpial layer showed considerable neuroglia in a loose sheet, which in places was made looser by edema. A few polynuclear leucocytes were found free in the outer portion of the layer of small pyramids. It was easy to mistake altered neuroglia cells of the edematous outer layers for polynuclear leucocytes. Pigmented neuroglia cells and considerable numbers of satellite cells occurred.

CASE 9.—G. G., a man of 25, was admitted to Dr. C. F. Withington's service at the Boston City Hospital, May 25, 1904.

History.—He had received a head injury on board ship. He lay unconscious for some time in a hospital in Porto Rico, but recovered. He had headache for four days previous to entrance, and there was unconsciousness for two days. On entrance he was restless and cried out when touched. He lay on his side, with the legs drawn up. His neck was stiff and retracted. Passive flexion was painful. The abdomen was slightly retracted. The knee jerks and plantar reflexes were exaggerated. Kernig's sign and Babinski's sign were present on both sides. There was *tâche cérébrale*. There was incontinence of feces, and the restless delirium persisted. Two days after entrance the pupils began to react sluggishly to light, and two days later the head was retracted to the left, with conjugate deviation of the eyes to the left. The extremities were somewhat spastic. Kernig's sign became less marked, and Babinski's sign was lost. Death occurred five days after entrance.

Clinical Summary.—Man of 25, with obscure history of previous head injury, has headache four days and is unconscious two days before entrance. Death occurs six days later, 10 days from onset of symptoms of meningitis.

Anatomic Findings.—The autopsy was performed by Drs. R. L. Thompson and E. E. Southard 32 hours after death.

Head: The scalp and cranium were normal. The sphenoidal sinus contained a small amount of clear gelatinous material. The other sinuses were normal. The middle ears were normal. The right cavity contained a little clear gelatinous material resembling that in the sphenoidal sinus. The pores of the right cribriform plate contained fibrinous pus in continuity with the exudate about the right olfactory lobe. The nasal cavities were clean.

Brain: Weight, 1,350 gms. The dura was slightly thickened, clung lightly to pia on peeling, but there were no adhesions. The sinuses of the dura contained cruor clot. The pia was tense, injected and a little sticky. The tissues about a few large sulcal veins were infiltrated with greenish, stringy pus. The frankly purulent areas of the vertex were never over 2 cm. in diameter and lay at varying distances within 6 cm. therefrom. There were a few subpial collections of pus over the cerebellum, especially near the brachium. A few of the arachnoidal villi were injected and a little more plastic than usual. The tissues about the basal veins, the chiasm and the infundibulum showed a deep layer of moist, stringy, greenish pus, apparently all within the pia. Both Sylvian fissures showed an extension of the exudate for 3 cm. The gyri were flattened, firm, a little plastic, of homogeneous consistence and slightly pinker than usual. The cortical markings were everywhere distinct. Substance clung to the knife on section. The puncta cruenta in various places in the white matter were unusually distinct; and, opposite the left frontal cortex, there were numerous punctiform hemorrhages in very clinging edematous substance. In the middle of this area was a focus 1 cm. in diameter composed of greenish fibrinous pus surrounded by a ragged injected wall. The right olfactory lobe was yellower and softer than the left and was glued in an exudate continuous with the exudate at the base. All the ventricles contained greenish fluid containing fibrin and grumous coagulum. There was no normal ependyma remaining. The exudate could be removed only by scraping and extends for from 1 to 2 mm. into subependymal tissue. The floors of the lateral and fourth ventricles looked like the walls of abscess cavities. The medulla was buried in pus filling the pial meshes. The substance was a little softened and over injected.

Cord: The dura was thick, a little brawny, and internally roughened. It peeled from the pia with slight difficulty. The meshes of the pia were distended with pus resembling that found in the cranium. The outermost layers of the pia were rather edematous, which made the exudate look more glassy than the cranial exudate. On section the cord appeared moister than normal and the pial vessels were markedly injected, resembling in places so many red spokes let in from the pial rim. The larger veins were not much injected. The exudate in places, notably about the cauda equina, was very thick and with the included nerves might measure from 0.75 to 1 cm.

Anatomic Diagnoses.—There were edema and congestion of the lungs, edema of the kidneys and acute splenitis. There was cerebrospinal meningitis, with focal abscess, encephalitis and pyocephalus. There was an exudate about the degenerating right olfactory lobe, with slight inflammatory reaction by extension in the cerebral and spinal dura.

Microscopic Findings.—Cultures from heart's blood and brain gave pneumococcus; from right lung, staphylococci; from left lung, *Streptococcus pyogenes*; from liver, *B. coli*, *B. proteus*, *etc.*; from spleen, *B. coli*. Cultures from the kidney were sterile. The meningeal exudate was largely cellular. The centers of the clefts were occupied by polynuclear leucocytes and an equal number of mononuclear cells. Near the vessels the mononuclear cells were more frequent and were often vacuolated or phagocytic for polynuclear leucocytes. Fibrin occurred in masses of irregular distribution, as well as about the veins. The arteries showed a minor degree of intimal swelling, with occasional included cells. The subpial neuroglia showed numerous swollen cells and a few mitoses. There was an increase of fibrils in the subpial layer. The cerebellum of this case showed an exudate much richer in large leucocyte-containing phagocytes than the cerebral exudate, and neuroglia-cell mitoses were fairly frequent in the molecular layer. Polynuclear leucocytes wandered freely in the cortex.

CASE 10.—E. V., a man of 48, was admitted to Dr. C. F. Withington's service at the Boston City Hospital, Feb. 17, 1905.

History.—There was a history of excess in alcohol. He had rheumatism 5 years before entrance. Two days before entrance he parted from a friend at 10:55 p. m., intoxicated but without symptoms of illness. At 11:10 p. m. the man was brought to the relief station with a story of a fall and injury to the head. He was discharged as well the next morning. He was dazed on reaching home, and had pain on the right side of the head. Delirium set in at 10 p. m. February 16. On entrance respiration was rapid and noisy. There was ecchymosis about the left eye. Râles were more marked and respiration more marked in the right back; pulse was rapid and knee jerks equal; Kernig's sign and Babinski's sign were absent. Leucocytosis was 32,600. The delirium continued. By 9:30 the next evening right hemiplegia had developed, with Kernig's sign and Babinski's sign. Death occurred 11 hours later.

Clinical Summary.—Man of 48, alcoholic, was brought to Relief Hospital one night with contusion of face and discharged next morning. He was dazed next day, and delirium was present in the evening. He entered hospital with signs in right lung; hemiplegia occurred on evening of second day, about 70 hours after original trouble. Death occurred eleven and one-fourth hours later.

Anatomic Findings.—The autopsy was performed by Drs. E. B. Bigelow and P. A. Lewis 23 hours after death and showed:

Head: The scalp was rather thick and loose, with a moderate amount of fluid blood beneath the lateral portions, particularly on the left. The calvarium was thick and moderately dense; the dura mater was loose. Convolutions could not be made out through the membranes. Everywhere beneath the dura and still more beneath the pia mater there was an abundance of yellow, tenacious, fibrinopurulent exudate. The distribution was quite even, although there was slightly more over the vertex than at the base. The ventricles contained a considerable amount of clear fluid, with a flocculent yellow precipitate. Section showed a firm, moist surface; the color was rather a dull pinkish-white. The puncta cruenta were well marked. The exudate extended along the trunk of the cranial nerves for a moderate distance. The Gasserian ganglia were infiltrated with pus. The middle ears were normal, and the upper nasal passages seemed normal.

The spinal canal contained a considerable amount of fibrinopurulent fluid. The cord was firm. The vessels were injected.

Anatomic Diagnoses.—Bronchopneumonia. Nephritis. Arteriosclerosis. Cirrhosis of liver. Old infarct of spleen. Acute cerebrospinal meningitis.

Microscopic Findings.—Cultures from heart's blood, spleen and brain were sterile. One culture from lateral ventricle was contaminated with *Staphylococcus albus*. Drs. Duval and Lewis were able to recover the pneumococcus from a rabbit into which pus from the ventricle was injected. The meningeal exudate was composed largely of cells; the polynuclear leucocytes slightly outnumbered the mononuclear cells. Fibrin occurred about the small veins. The endothelium of some arteries was lifted by a deposit of cells, chiefly polynuclear leucocytes. The subpial neuroglia was fairly dense but edematous. There was no evidence of acute neuroglia cell changes.

CASE 11.—J. M., a boy of 10, was admitted to the aural service of Dr. E. M. Holmes at the Boston City Hospital Sept. 27, 1904.

History.—Two weeks before he was seen in the outpatient department with bilateral otitis media. A right mastoid operation was performed September 29 by Dr. Holmes, but was stopped on account of hemorrhage. The temperature remained high. The patient vomited sometimes after eating. Two weeks after entrance a second mastoid operation was done on the left side by Dr. G. A. Leland. After this the temperature fell, but five days later right facial paralysis developed with well-marked *risus sardonicus* on left. There were ptosis of the left eyelid, slight horizontal nystagmus, convergent strabismus on right, slight rigidity of neck, and Kernig's sign. Toward evening, twitchings of the left side of the face developed and the paralysis gradually disappeared. Death occurred the next day.

Clinical Summary.—Boy of 10, with bilateral otitis media of unknown duration (over two weeks), on whom mastoid operations were performed, death occurring three weeks after admission and one week after a second operation.

Anatomic Findings.—The autopsy was performed by Dr C. W. Duval 27 hours after death and showed:

Head: The scalp and calvarium were normal. Behind the left ear was a surgical incision 5 cm. in length, running parallel with the external ear and directly over McEwen's triangle. Six or eight stitches held it together. The dura was non-adherent except along petrous portion of the left temporal bone. The sinuses contained fluid blood. The whole of the left hemisphere beneath the pia was covered with thick, greenish-yellow pus. Parts of the cortex beneath this pus showed marked depressions. The right hemisphere was congested, and the convolutions and sulci obliterated. The cortical substance was quite firm in consistence.

Anatomic Diagnoses.—Chronic pachymeningitis. Purulent leptomeningitis. Acute encephalitis. Mastoiditis (acute and chronic). Edema and congestion of the brain. Chronic pericarditis.

Microscopic Findings.—Cultures from heart's blood, liver, spleen and meninges were sterile. Numerous Gram-staining, lancet-shaped diplococci with capsules were found in smears from meninges. The microscopic picture in the cortex was mixed. There was an exudate of small mononuclear cells, some of them lymphocytes, about some veins. Besides this, there was a deep layer of fibrin with polynuclear leucocytes enmeshed, and there were foci composed chiefly of polynuclear leucocytes. A great portion of the acute exudate failed to stain well. Vacuolated and leucocyte-containing mononuclear cells were frequent. The small arteries showed swelling without proliferation of endothelium. The subpial neuroglia showed mitoses and eccentrically swollen cells. There were a few newly-formed fibrils. Leucocytes did not wander freely into the nerve substance.

CASE 12.—J. M., a woman of 45, entered the aural service of Dr. G. A. Leland, April 18, 1905.

History.—She had had pain in the right ear for three weeks. The evening before entrance coma set in. At entrance there was prostration. Temperature was 102.6; respiration, 50; pulse, 120. The right pupil was larger than the left; both pupils were sluggish to light. The retinæ were congested and there was paralysis of the right sixth and seventh nerves. There were diminished sensation of right side of body, stiffness of neck with pain on pressure, absence of knee jerks, a suspicion of Kernig's sign on both sides and mastoid tenderness. A mastoid operation was done at midnight. Death occurred 10 hours later.

Clinical Summary.—A woman of 45, with history of pain in right ear for three weeks, becomes comatose and shows sensory and motor paralyses of right side of body. Death occurred 10 hours after mastoid exploration.

Anatomic Findings.—The autopsy was performed by Dr. S. B. Wolbach 1 hour after death and was limited to the head.

There was a wound of right mastoid operation. The subcutaneous tissue of the scalp was slightly edematous. The calvarium was of average thickness and density. The dura was normal. The right superior longitudinal, the occipital, superior and inferior petrosal sinuses and right lateral sinus were normal and contained liquid blood and cruor clot. In the left lateral sinus at the torcular Herophili there was a thrombus beginning at the junction of the right and left lateral sinuses and extending laterally to the left for a distance of 1 cm. This thrombus was grayish-pink in color, friable and firmly attached to the walls of the sinuses. Close to the jugular foramen, and 6 cm. from the torcular, there was another similar thrombus 1.5 cm. in length. Between the dura and the temporal bone there was a thin layer of clotted blood covering an area about 7 cm. in diameter. Along the course of the vessels of both hemispheres there was a grayish-yellow exudate, thickest at the fissure of Sylvius and diminishing toward the median fissure. This exudate was subpial, approximately equal in amount on both sides and extended to the median fissure on both sides. The base of the brain was covered with a similar, rather more abundant deposit, thickest at the be-

ginning of the fissures of Sylvius about the infundibuliform process and third nerve. The entire surface of the cerebellum was covered with a similar exudate. The consistency of the brain seemed good, and it cut with ease. The cut surfaces were rather moist; puncta cruenta were prominent as oozing points. Each ventricle contained about 5 c.c. of yellowish, cloudy liquid. At each posterior horn and at each lateral horn there was a small quantity of thick, greenish-yellow puriform matter. The pineal body was represented by a cyst 1 cm. in diameter. The exudate on the surface of the cerebellum and geniculate bodies was continuous beneath the splenium with a similar exudate present in the velum interposition about the pineal body. Section of the basal and centrum semiovale showed nothing abnormal. The pons and medulla were normal. The exudate extended downward from the pons, medulla and cord as far as could be seen through the foramen magnum. The left middle ear was normal. In the right middle ear, the upper anterior half of the membrane tympani was destroyed. The cavities of the middle ear and antrum were filled with yellowish-red granulations. The incus lay free in the cavity of the middle ear. The malleus was held loosely in position. The cells of the surrounding cancellous bone contained a thick, clear, yellowish fluid. The sphenoidal sinus contained a quantity of gelatinous, yellowish material. Cover-glass preparations from the exudate at the base of the brain and from that in the ventricles showed many lanceolated, Gram-staining diplococci.

Anatomic Diagnoses.—Pneumococcus meningitis. Thrombosis of left lateral sinus. Chronic otitis media. Infection of sphenoidal sinus. Mastoid operation.

Microscopic Findings.—Cultures from the meninges showed pneumococcus. The meningeal exudate varied. In some places polynuclear leucocytes surpassed the mononuclear elements in number, but in most places mononuclear cells, chiefly phagocytic for polynuclear leucocytes, occurred in large numbers. Proliferation of the intima and infiltration of the walls of the veins and exudative lifting of the arterial intimæ were found. Occasionally a small vein was found completely occluded by a fresh leucocytic thrombus. The subpial neuroglia was fairly dense. Polynuclear leucocytes were sometimes found in the cortex and wandering freely in subependymal tissues.

GENERAL CLINICAL SUMMARY.

Eleven patients were male, one (Case 12) female. The youngest were two boys of 10 (Cases 2 and 11), the oldest a man of 70 (Case 3). The average age was 43. Seven patients were between 35 and 50, 3 under 35, two over 50.

Two cases followed inflammation of the middle ear (Cases 11 and 12). The other ten cases showed no inflammation of the middle ear.

Two (Cases 6 and 10) gave a history of trauma while drunk. The patient in Case 9 is said to have recovered from head injuries.

Four cases gave history of excess in alcohol (Cases 1, 5, 6 and 10).

Four cases gave history of pyogenic infections of long standing, three (Cases 1, 7, 8) of chronic bronchitis, one (Case 4) of old pleurisy.

The character of onset varies. Cases 11 and 12 were the outcome of neglected otitis media. In cases 6 and 10 the onset was probably rapid, but obscured by alcoholism. Cases 7 and 8 were incidents of pneumonia, Case 5 of unresolved pneumonia, Case 4 of pleurisy, Case 3 of erysipelas. Case 2 was fulminant.

The durations of the acute symptoms and of the symptoms ascribable to cerebral lesions may be assigned (subject to the usual reservations) as given in the accompanying table.

The cases may be characterized briefly as follows:

Cases 11 and 12 were clinically clear: otitis media and sequelæ. Of the other cases, 1, 2, 9, 10 and perhaps 6 could be regarded in life as showing cerebral symptoms, and Cases 4 and 5 gave somewhat doubtful evidence in life of the lesions afterward discovered. Cases 7 and 8 could scarcely be more definitely labeled than as cases of severe pneumonia. Case 3 was apparently not more than a septicemia.

	Duration of acute symptoms.	Duration of cerebral symptoms.
Case 1.	5 weeks	1 week.
Case 2.	28 hours	28 hours.
Case 3.	1 week	1 week.
Case 4.	3 weeks	4 days.
Case 5.	17 days	1 day.
Case 6.	1 week	1 week.
Case 7.	7 to 8 weeks	pneumonia, 10 days.
Case 8.	8 days	pneumonia, 8 days.
Case 9.	10 days	10 days.
Case 10.	81 hours	11 hours.
Case 11.	Over 5 weeks	1 day.
Case 12.	Over 3 weeks	1 day.

GENERAL ANATOMIC SUMMARY.

The brain lesions varied in character and distribution. The lesions affected meninges, ventricles, or the nerve tissue itself.

Meningeal lesions were found in all cases except 1 and 2. The meningeal exudate was greenish or yellowish and contained, as a rule, much fibrin. The exudate was always deeper in the sulci and could be found there in discontinuous sheets. The upper surface of the cerebrum (especially along the vertex and over the frontal region) and the upper surface or sides of the cerebellum showed exudate in all our meningeal cases. The cisternæ and pial tissues at the base, as a rule, were filled with pus; but Cases 3, 7 and 11 (an otitic case) failed to show involvement of the base.

The cases which failed to show involvement of the base failed also to show pus in the ventricles. Case 8 also showed no involvement of the ventricles. The ventricles, as a rule, were all equally involved. The exudate varied from opaque to turbid or flocculent. Although the exudate was elsewhere fluid, single drops of fibrinous pus drained into the posterior cornua of the lateral ventricles. The floors and recesses of the ventricles more frequently showed pus than the roofs and free non-vascular parts. The most destructive suppuration in the ventricles was found in Case 9.

The lesions of the brain substance were various. Eight cases showed no focal lesion of the substance in the gross. Cases 1, 2, 9 and 11 showed acute red softening. Case 9 showed a small abscess. The areas of central encephalitis showed distinct and numerous puncta cruenta and punctiform hemorrhages in the midst of tissue pinker than normal, plastic or friable and edematous.

The spinal cord was affected in those cases in which the tissues at the base showed pus. The pus in the cord membranes occurred frequently in the same discontinuous sheets characteristic of the cortical exudate.

The dura mater was occasionally distended. The venous sinuses, as a rule, contained cruor clots. Case 12 showed sinus thrombosis on the side opposite to the mastoid operation. Cases 11 and 12 were infectious, both of otitic origin. In the other ten cases the middle ears were normal. Case 9 showed exudate in the cribriform plate, but the nasal cavities were free. In the cases with exudate at the base, the sheaths of the fifth nerve, the Gasserian ganglia, and the tissues about the pituitary body sometimes showed frank pus.

The other organs offered some things of note. Thus, all cases, except the otitic cases (9 and 12) (in Case 12 the examination was limited to the head), showed acute lesions in the lungs, lobar pneumonia in Cases 2, 5 (organizing), 7 and 8; bronchopneumonia in Cases 1 and

10; edema and congestion in Cases 3, 6 and 9; encysted pleurisy in Case 4. These lung lesions were probably responsible for the origin of some brain infections. The same doubtful correlation occurred in our series of brain infections with *Staphylococcus pyogenes aureus,* in which focal pulmonary lesions were either grossly prominent or made out microscopically in all six cases.

Aside from the lungs, the organs of the trunk showed little. Case 5 was a case of malignant endocarditis (aortic). Case 4 showed, in addition to encysted pleurisy, an acute pericarditis.

Chronic lesions, which might possibly have a bearing on infection, were found in a few cases. Half the cases (1, 3 (marked), 6, 7, 8 and 10) showed arteriosclerosis; and, of these, Case 6 showed a hypertrophied, dilated and fatty heart. Case 4 showed chronic nephritis, Case 8 chronic adhesive pericarditis, Case 10 cirrhosis of the liver.

GENERAL SUMMARY OF MICROSCOPIC FINDINGS.

Alterations were found in several of the tissues, particularly in the meningeal connective tissue, the walls of the arteries and to some extent of the veins, and in the nerve tissue, under which may be considered the reaction of the subpial neuroglia and the immigration of polynuclear leucocytes.

The meningeal tissues contained numerous cells, chiefly polynuclear leucocytes and mononuclear elements in varying proportions. In Cases 3, 6, 8, 10 and in parts of Case 11 the polynuclear leucocytes plainly outnumbered the mononuclear cells. In Cases 1, 4, 7, 12 and in parts of Cases 5 and 11 there are more mononuclear cells. Cases 2 and 9 showed these cells in about equal numbers.

Phagocytosis of mononuclear cells for polynuclear leucocytes was best marked in Cases 1, 4, 5, 9, 11 and 12, in most of which cases the mononuclear cells outnumbered the polynuclear cells. Phagocytosis for bacteria was best marked in Cases 1 and 2 (the two cases of almost pure encephalitis).

The general distribution of the meningeal exudate was fairly constant. Certain central spaces in the pia mater were likely to contain masses of polynuclear leucocytes even in cases in which the perivascular tissues and the tissues at large were filled with mononuclear cells. Another characteristic was the distribution of the fibrin, which was found in abundance about the veins and in that part of the pia mater just overlying the nerve tissue. There was no evidence of focal necroses in the exudate, although portions of the exudate stained poorly in Cases 7 and 11.

The arteries of the meninges showed lesions in all the meningitic cases, but these lesions were not characteristic in Cases 1 and 2. The intima was lifted or dissected away from the elastica by an accumulation of cells, largely polynuclear leucocytes. All degrees of this process occurred up to occlusion of the lumen. The lesion was frequent and marked in Cases 3, 7, 8, 10, 11 and 12, less frequent in Case 4 (in which the arteries of the spinal pia mater were affected), and in Cases 5, 6 and 9.

Somewhat less common but more striking were the lesions in the veins (Cases 5, 6, 7, 8, 12 and in some other cases to a minor degree). The walls of the larger veins, especially the large sulcal veins, showed the process more distinctly than the venules. In the walls of the venules there was occasionally a thorough infiltration with polynuclear leucocytes and minor proliferative changes; but in the larger veins there was a prominent overgrowth of lining cells, among which the polynuclear leucocytes lay in a variety of ameboid shapes.

Case 6 was distinguished by the presence in the walls of numerous minute mural organizing thrombi (ten, for example, crosscut in a section of a vein about 1 mm. in diameter). Case 12 (a case of sinus thrombosis) showed occlusion of small veins of the pia mater also.

The reaction of the nerve tissue to the infection may be considered under the head of vessels, neuroglia and nerve cells with their adnexa.

The vessels of the cortex showed adventitial infiltration with polynuclear leucocytes in various degrees. Case 1 showed great accumulations of phagocytic cells about some vessels. The nerve cells failed to show notable or any rate constant changes.

The neuroglia exhibited, in many cases, a tendency to cell increase in the subpial layer. Three cases (6, 9 and 11) showed numerous mitoses. Case 6 showed mitoses among cells regarded as satellite cells. Cases 1, 3, 4 and 5 also showed cell changes in the neuroglia, eccentrically swollen cell bodies, multiple nuclei, or fibrils in apposition to cell processes. In Cases 2, 7, 8, 10 and 12 neuroglia changes were few or absent. In Case 2 (fulminant case in a boy of 10) the original layer of neuroglia was thin and the involvement of the meninges slight. In the other cases which showed no acute neuroglia change the original subpial layer happened, as a rule, to be dense. This character of the original neuroglia, however, can scarcely govern the occurrence of acute changes, since Cases 3 and 6 had dense subpial neuroglia, but marked acute changes.

The cortex was penetrated by polynuclear leucocytes in most cases. This penetration was free in Cases 2, 4, 5, 9 and 12. Occasional or fairly frequent examples of leucocytes in the substance were found in all the other cases, except 7, wherein very few examples occurred.

EXPERIMENTAL MATERIAL.

Inoculations were made in guinea-pigs with different strains of the pneumococcus kindly supplied us by Drs. C. W. Duval and P. A. Lewis in the course of their pneumococcus work in 1905.[3] The results of inoculation with the various strains (sixteen), as tested by the appearances in guinea-pigs killed four days after inoculation, were various, ranging from negative to pronounced suppuration. Work was pursued with a single organism only (C D 6 of the series isolated by Duval and Lewis). The same method, in general, was employed as in our work with *Staphylococcus pyogenes aureus,* the method of simultaneous inoculation of several animals and histologic examination of animals killed on successive days during the course of the disease.

As in the work with *Staphylococcus pyogenes aureus,* various methods of inoculation were employed. The intrapulmonary method, applicable in staphylococcus work, is not well suited to pneumococcus work in the guinea-pig. Subdural inoculations are effective, but are open to the usual objections that the destruction and hemorrhage produced by the operation obscure the results of infection.

Resort was had, therefore, to a method of inoculation by way of the orbit. The syringe needle is introduced at the line of reflection of the conjunctiva on the temporal side of the globus oculi. The bouillon culture is then slowly introduced into the tissues of the orbit. Exophthalmos follows, but subsides in a few minutes.

3. Studies on the Pneumococcus, C. W. Duval and P. A. Lewis, Jour. of Exp. Med., August, 1905.

There is occasionally transient circular progression toward the side of inoculation. This method may be modified by plunging the needle through the wall of the orbit into the brain. Since the conjunctiva, as a rule, is free from bacteria, the method of orbital inoculation effects entrance into the interior of the cranium more advantageously than other methods. This method is said to have been first used in rabies work. Other methods, as nasal and ear-plate inoculations, were used, but are not so good for general work as the orbital method.

We found difficulty in recovering the pneumococcus from the organs of the inoculated guinea-pigs and were unable to obtain a complete single series of daily stages of the brain lesion with positive cultures in all. It would be possible, doubtless, to obtain an unbroken series of positive cultures by using very numerous animals and the rabbit's blood agar culture medium employed by Duval and Lewis in their investigation. Positive results, however, were obtained in a sufficient number of brain cultures in the series with organism C D 6 (Series of Duval and Lewis).

The general result of the experimental work is as follows:

Of the four-day orbital inoculations, seven cultures gave slight or negative results; three cultures gave accumulation of chiefly mononuclear cells in the meninges; two cultures gave very slight exudation with congested veins filled or lined with polynuclear leucocytes; three cultures gave exudates (recalling many of the human exudates) with polynuclear leucocytes and mononuclear cells in various, about equal proportions; one culture gave polynucleosis.

A series of brains from guinea-pigs inoculated in the orbit with organism C D 6 showed the following:

Six hours after inoculation many veins showed leucocytes arranged as in the inert layer. The tissues about the base and cerebellum showed a light exudation of polynuclear leucocytes and considerable hemorrhage. In the exudate were occasional polynuclear leucocytes with deeply eosinophile granulations. The third ventricle showed hemorrhage with occasional polynuclear leucocytes; the mural ependyma showed no changes. The brain substance was normal, except for a few shrunken and metachromatic nerve cells; there was no penetration of substance by polynuclear leucocytes.

The brains after one, two and three days would in many cases be difficult to pick out and arrange in series, on account of variations in the amount of exudate and hemorrhage. More and more cells of the mononuclear series entered; but it was hard to estimate these when far outnumbered by polynuclear leucocytes and to distinguish them from such cells normally present. In one brain, two days after inoculation, a few minute hemorrhagic abscesses were found.

The condition four days after inoculation is described more fully, since four-day material can be recommended for test work. Four days after inoculation the tissues between the laminæ of the cerebellum and at the base are distended with a heavy exudate in which polynuclear leucocytes somewhat outnumber the mononuclear cells. Fresh hemorrhages in the pial meshes are few and small. An occasional phagocyte containing polynuclear leucocytes occurs in the adventitia of veins. Cells of the lymphocyte series occur, with now and then a plasma cell; but these cells occur in foci, whereas the polynuclear leucocytes and the mononuclear cells having vesicular nuclei are of general distribution. The ventricles show slight hemorrhage, a light exudate of polynuclear leucocytes and occasional phagocytes containing polynuclear leucocytes. Penetration of the cortex by polynuclear leucocytes is frequent and is particularly free in the cerebellum, where leucocytes are found deep among the cells of the granular layer.

A comparison of the four-day material after subdural injection of equal amounts of the same culture shows that the subdural lesions are of more advanced character, in the sense that polynuclear leucocytes are fewer, pigment-containing cells more numerous, and karyokinetic figures in the adventitial tissues more frequent than in the orbital material.

The exudates, however, are in somewhat different loci, the exudate after orbital inoculation is largely basal after subdural inoculation over the convexity.

The pictures on succeeding days are only roughly open to serial arrangement from internal evidence. The ependymitis, not so marked as in our series with *Staphylococcus aureus*, plays a minor part. There is rarely any destructive encephalitis. We have, therefore, only the meningeal picture, which as a single guide is unsatisfactory.

In from two to five weeks there was no longer evidence of disease in our series, except a multiplication of glia cells along the meninges and beneath the ependyma. The latter we are as yet unwilling to ascribe to the effects of the pneumococcus, since in many guinea-pigs the process is found from other causes. Mitoses beneath the ependyma are occasionally seen at various points in the series.

GENERAL SUMMARY AND REMARKS.

The foregoing is a report of cases grouped together as showing effects of pneumococcus brain infection. The clinical and anatomic varieties which they exhibit are only in part explained on present evidence. A long series of cases with parallel differential work on the best bacteriologic lines will be required to settle questions brought up by the various extent and effect of lesions like arteritis and phlebitis, by the varying prominence of polynucleosis and mononucleosis in the meningeal exudate, by variation in the phagocytic properties of the cells involved, and by the varying extent and character of the attendant cellular gliosis.

Clinically viewed, these cases are quite ill assorted. The group includes fulminant and wholly obscure cases, cases not to be told from severe pneumonia, clearly otitic cases, septicemic phenomena, and cases a week old or longer which are clearly cerebral or meningitic in character.

Anatomically viewed, the pneumococcus produces in the meninges and brain substance of man a type of inflammation in which cellular exudation and fibrin formation are prominent.

The picture postmortem varies from focal or diffuse red softening to purulent leptomeningitis and ependymitis and occasionally abscess formation. The meningeal exudate is almost constant on the convexity. The base is frequently involved and, with the base, often also the ventricles and the cord.

The histologic picture is more various than the anatomic picture. The meninges contain a cellular exudate which varies in the proportion of polynuclear leucocytes and mononuclear cells. Phagocytosis on the part of mononuclear cells for polynuclear leucocytes is best marked in cases in which the mononuclear cells outnumber the polynuclear leucocytes. The meninges in individual cases are fairly constant in the cell proportions

found. Fibrin is found about the veins and adjacent to the nerve tissue.

The arteries characteristically show lifting of the endothelium by cellular exudate. The veins often show proliferative changes in the intima with infiltration by polynuclear leucocytes (characteristic in large sulcal veins). Two cases showed mural thrombus formation in the veins.

Seven cases out of twelve showed increase or other signs of change in the neuroglia, especially of the subpial layer.

Penetration of the cortical tissue by polynuclear leucocytes is almost constant.

Orbital inoculations in the guinea-pig showed remarkable variety in the results with different cultures. With the cultures yielding positive results, a general but not constant tendency is to the production of exudates with a high proportion of mononuclear cells of the phagocytic series. A series of orbital inoculations with culture identical throughout exhibited clearly the same tendency. The exudation of polynuclear leucocytes is primary, however, and may be noted in six hours. The exudate is at its height in three, four or five days and leaves no trace in from two to five weeks. Ependymitis and encephalitis are not prominent. The guinea-pig inoculations, as a rule, produce no clinical sign.

THE DUMB-BELL INTESTINAL ANASTOMOSIS.

A PRELIMINARY REPORT ON A NEW MECHANICAL DEVICE AND A NEW METHOD FOR EITHER INTESTINAL APPROXIMATION OR ANASTOMOSIS WITH THE STOMACH.*

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MACOMB, ILL.

The numerous methods of suturing that are described and the various mechanical devices that are demonstrated, even in our recent standard text-books of surgery, prove that the ideal method for intestinal approximation of anastomosis has not been discovered. Some of the methods of suturing have been successfully used by surgeons in a series of cases until they were almost ready to declare the method all that could be desired, when a sad accident occurred and the postmortem showed a defect in its workings. The same may be truthfully said of all the mechanical devices up to the present time.

The new method of operating and the new device here explained is the result of a year's work. I began with the idea that, in an end to end approximation of an intestine or an anastomosis of the intestine with the stomach, either where the severed end is used to make the anastomosis or with a lateral union, all of the connective tissues must be incorporated in the fixation method in order to safeguard against leakage, and also to get a firm safe union. This is what nature does in all cases in which one organ becomes agglutinated to another, and ultimately becomes anastomosed as a result of septic infection. After experimenting with one device after another, I finally succeeded in making this simple hollow dumb-bell accomplish the desired result. It simply acts as a hollow cylinder for the passage of liquids and gas, and at the same time gives a base on which we can tie all the connective tissue in one firm grasp by means of a rubber or silk suture of course fiber, and thus have a firm union for three or four days while the serosa and muscularis are becoming united by an organized lymph in their new position. In from three to four days the organized tissue is a safe barrier against leakage. The ligature necroses through the connective tissue by this time and frees the device.

The dumb-bell is made of aluminum and is very light. There are three different sizes, one for children, one for adults and one for the colon. This same method may be used with a dumb-bell moulded from soft rubber or from any digestible material, but I prefer one of aluminum, as it can be made small, is light, has a definite strength so that one can do a definite work and know what to expect during a definite time.

We desire the connective tissue to hold at least for three days and prefer it to hold for five. My experiments on pigs proved that the dumb-bell is freed after from four to six days. The rubber ligature should be firmly wrapped around the tissues and the dumb-bell twice, then securely tied with several knots. The knots and ligatures are left within the canal and the quantity of ligature can make no difference. The ligature material should be coarse, so that it will necrose through slowly, hence use a rubber band about one-fourth inch broad (or heavy braided silk). Silk or linen sutures are not so safe as rubber in the hands of a beginner, as any sawing motion in applying the ligature might cut through and thus necessitate reamputation of the gut and a serious prolongation of the operation.

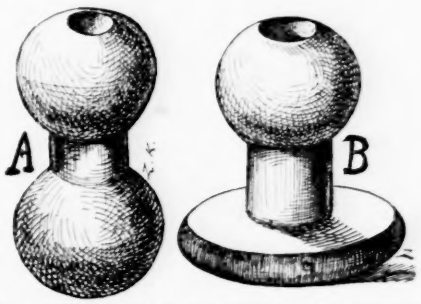

Fig. 1.—Showing the two styles of the dumb bells.

Operation for end to end approximation: The two ends of the bowel are secured by a suture at the mesenteric border, care being taken to include in this suture the V-shaped mesenteric triangles. Directly opposite the mesentery, on the periphery of the intestine, another suture is placed. Each of these sutures is tied loosely, as they are only used for the purpose of invaginating the two ends of the bowel. Two inches from the end of the intestine, along its peripheral border, an incision is made through the intestinal wall, one inch in length. This incision is made in the proximal end of the intestine, if it be enlarged, otherwise on the distal end. A pair of forceps is now passed through the incision and into the end of the intestine and the tension sutures secured and drawn through the incision. Now steadying the mesenteric border of the intestine between thumb and finger, and drawing the sutures, invaginates the two ends of the intestine into each other and through the incision. The dumb-bell is now placed into the ends of the invaginated intestine and the ligature applied at a distance of one-half inch from the ends of the severed intestine, encircling it and the handle of the dumb-bell. Disinvaginate by gentle traction and pressure on the dumb-bell; reunite the peripheral incision by a Czerny-Lembert or Gély suture. Then complete the operation by suturing the mesenteric opening.

The three sizes of the dumb-bell can by the ligature method be made to fulfill any requirement in any operation from the cardiac end of the stomach to the rectum.

* Read before the Chicago Academy of Medicine, 1905.

In doing a gastroduodenostomy an opening is made on the ventral wall of the stomach one and one-half inches in length. Through this aperture by means of a pair of forceps the dumb-bell is forced through the pyloric opening and dropped into the duodenum, where it can be pushed along by the hand within the abdomen to any selected point of the intestine, as the small omental cavity is opened for inspection, just as in any dorsal gastroenterostomy.

If there be a stenosis of the pylorus, an incision must be made in the duodenum near the pylorus and the dumb-bell placed in the duodenum, and this incision sutured. When the point is selected, with the right hand seize the dumb-bell from within the stomach with tenaculum forceps, then invaginate the duodenal wall and

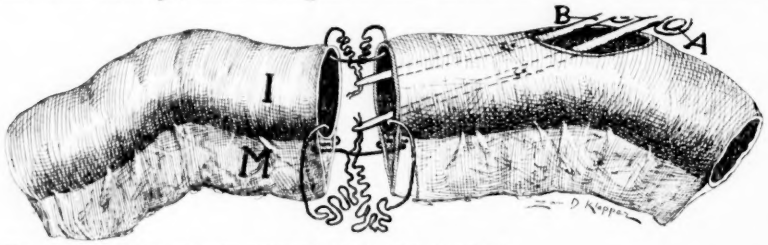

Fig. 2.—Traction sutures grasped by forceps A and B.

dorsal stomach wall through the former incision on the ventral stomach wall by pressing the ventral wall down over the dumb-bell. Tie a firm ligature of heavy silk, reinforced by a rubber ligature, to insure uniform pressure, and necrosis.

Precaution must be used in not selecting a dumb-bell of more than one-half inch in

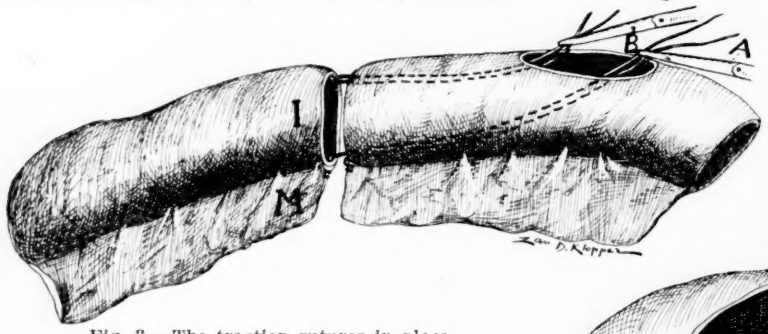

Fig. 3.—The traction sutures in place.

diameter, or excessive amount of the peripheral side of the small intestine will be ligated.

For uniting the severed end of the ileum to the site of the colon push the dumb-bell into the end of the intestine out of the way, throw a pursestring ligature around the end of the severed intestine, and leave the needle threaded. Select the point of the colon for anastomosis; nearly opposite this point open the colon by an inch incision, preferably in the tenia coli. Now insert the needle at the previous point selected and pull it out through this incision, and draw the side of the sigmoid and the end of the intestine into this incision. Now force the dumb-bell forward to the end of the intestine and place the ligature over the small end of the dumb-bell. Suture the opening into the colon and also the mesentery of the small intestine.

Where the cecum has been amputated the work can be done through the end of the colon before it has been sutured. Experience has taught us that the small intestine should never be united end to end with the large intestine, but always lateral above a newly-made cecum.

A specimen removed twenty-four hours after the operation showed absolutely no leakage, the ligature and dumb-bell were firmly in place, and a safe protective band of lymph was becoming organized. Especially at the dangerous mesenteric border can the accurate union be noticed. The strangulated ends of the intestine external to the ligature were very much hypertrophied, and dilated the intestine over the small end of the dumb-bell. For this reason I have made the opposite end of the dumb-bell one-fourth inch larger, so as more accurately to coapt the surfaces during the first twenty-four hours.

A second specimen, taken forty-eight hours from the time of the operation, showed very firm organized lymph. The strangulated rim that was hypertrophied in the other specimen was receding here. The ligature, where the intestine was dissected, still held firmly and could not leak.

In a third specimen, taken from a pig six months after the operation, there was great difficulty in finding the place of union. The lumen was normal and there was but a bare trace of circular cicatrix. It could only be

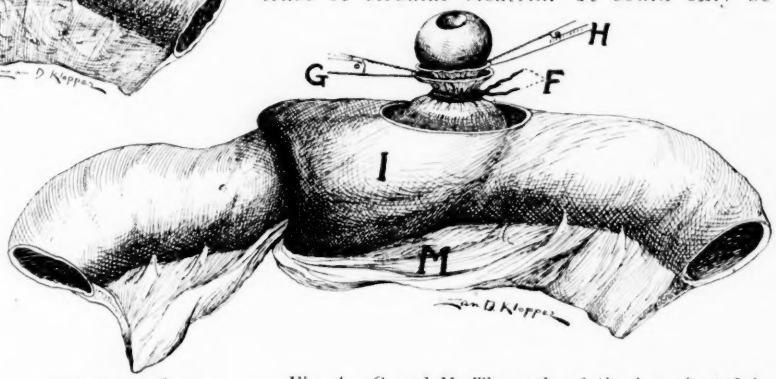

Fig. 4.—G and H. The ends of the invaginated intestine. F. Rubber ligature.

detected in a good light, and could barely be distinguished by touch. This pig weighed thirty-five pounds in May and 212 pounds when killed in November. The dumb-bell was evacuated on the tenth day.

A fourth specimen was secured from a pig

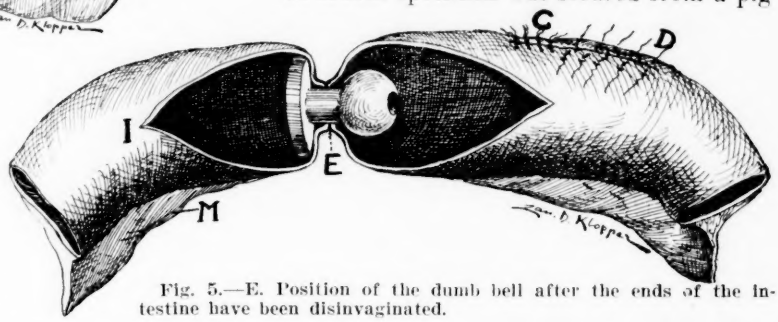

Fig. 5.—E. Position of the dumb bell after the ends of the intestine have been disinvaginated.

8 months after the operation. There was but a very slight limitation of the intestine. The cicatrix was barely to be distinguished. On inverting the specimen it showed a beautiful line of union of the mucous membrane. The union could barely be felt, and only showed a circular ring with a minimum amount of cicatricial tissue. This pig weighed fifty-four pounds in April at the time of the operation, and 340 pounds when killed in December. The dumb-bell was evacuated in this animal in eight days.

The advantages of this method of operating are:

1. Simplicity of the construction of the dumb-bell; therefore, always ready.
2. Simplicity of the operation.
3. The absolute safeguard against leakage, as the ligature secures all of the connective tissue.

4. The short time in which the operation can be performed.

5. The dumb-bell cannot remain at the site of operation more than four or six days, as the connective tissue will all have been uniformly necrosed by that time.

6. The extremely light weight of the dumb-bell, its size and shape insure against the possibility of its lodging at any part of the alimentary tract.

7. No reinforced sutures are necessary.

8. The minimum amount of cicatricial tissue that ultimately remains.

ROENTGEN DIAGNOSIS OF DISEASES OF THE LUNGS.*

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PHILADELPHIA.

The importance of Roentgen examinations of the lungs is well expressed by the statement of Dr. Judson A. Daland, who says: "No chest examination is complete without an *x*-ray examination." In order to make Roentgen examinations of the greatest possible value, the best technic and the most careful and accurate interpretation must be employed.

As specialists in this special branch of medicine, we have made great strides in the perfection of our technic, but even with the most perfect technic in the making of a negative, much general knowledge of medicine, and much experience is still needed to interpret accurately the shadows obtained. Much assistance can be obtained from the study of the literature, but much more can be learned by the actual study of the negatives of the various pathologic conditions, associated with the clinical or the postmortem findings.

Postmortem examinations are seldom made immediately after the Roentgen examination, and in many of our cases they are never made. No one of us, therefore, has seen explanations of all the shadows obtained in our negatives. Neither has any one of us had the opportunity of studying all the pathologic conditions that we may be called on to examine. I have decided, therefore, to present before this body a number of Roentgenograms, showing a variety of pathologic conditions of the lungs, and to give my interpretation. In many instances, I know that my interpretation is correct, but in others, some of my colleagues may differ with me. It is with the hope of bringing out criticisms and thus of combining our experience in the study of diseases of the lungs, that I present this subject.

Fluoroscopic examinations of the lungs have been made almost since the discovery of the Roentgen rays, but the actual progress in the Roentgen diagnosis of diseases of the lungs dates from the beginning of short exposures. In this field excellent work has been done by Hulst, Rieder and others.

In order to study the lungs accurately, the negative must be made while the lungs are at rest, or, in other words, while the patient holds the breath. This will usually be from three to fifteen seconds. I have succeeded in making several good negatives of the chest of a child of 9 years of age in one-tenth of a second. Such short exposures are not necessary in the study of the lungs, but are necessary for the accurate study of the heart.

* Read at the Annual Meeting of the American Roentgen Ray Society, Baltimore, Sept. 28-30, 1905.

As a rule, a careful physical examination should precede the Roentgen examination, not because it will modify the shadows, but because it will enable the Roentgenologist to interpret those present, and may modify the method used, and thus make a second examination unnecessary. The greatest field of usefulness of the Roentgen rays in lung diseases is the study of tuberculosis. Here the lesions can be recognized earlier and more accurately than by any other method. Besides assisting in making a diagnosis, it is the most valuable and the most accurate method of recording the lesions at the various stages of the disease, and thus enables the physician to estimate the value of his therapeutic procedures.

METHOD OF MAKING THE EXAMINATIONS.

I have practically discontinued the use of the fluoroscope, because of its inaccuracy and because of the dangers attending its use. By the use of the modern devices for the protection of the operator at least one of these objections can be removed; still, I feel that a fluoroscopic examination is not necessary. Generally, a negative should be made with the plate posterior to the patient and another with the plate anterior to the patient, so as to give proper value to any lesions lying near to the surface, and in order to recognize any thickening of the pleura. As a rule, the patient should be placed in the recumbent posture, except when pleural effusion is suspected, in which case the patient should be examined in the sitting posture. The tube should be placed at a distance of from 18 to 20 inches from the plate. The time of the exposure will vary with the time that the patient can hold the breath, and this time should be accurately determined by testing the patient several times before attempting to make the exposure.

INTERPRETATION.

The proper interpretation of the negative is more important than the making of it and fully as difficult. The negative itself should be used for study.

Old calcified tubercles give the most decided shadows, and lesions of this kind can be recognized as small as one-eighth of an inch in diameter. Old scars or fibrous tissue cast a less dense shadow and require larger lesions, but they can usually be recognized by their band-like appearances.

Consolidations vary in the density of their shadows with the size of the lesion; but an area one-half inch in diameter can be recognized in an emaciated person. In one patient, who was very much emaciated as the result of tuberculosis of the peritoneum, I succeeded in showing little tubercles the size of a pin head. Consolidations seldom occur singly, therefore, they give the lung a mottled appearance, except when there is massive consolidation. Finally, the consolidation can be recognized by comparison of the suspected area with that of the opposite lung or with the other parts of the same lung. The tubercular deposits, or the affected areas lying in different planes, are thrown on the plate in one plane; therefore, on superficial observation, one might conclude that a greater proportion of the lung is affected than is correct. That is, the whole lung might show a mottled appearance, and the false conclusion be drawn that no healthy lung tissue remained. This mistake need not be made by an experienced observer, because if the whole lung or lobe is involved the degree of general density will be much greater than when only scattered areas are involved, and the density will approach that of the shadow of the heart. Even when a whole lobe is involved, the shadow is rarely uniformly dense, because the

lung is rarely uniformly consolidated. There are likely to be small or large areas of cavity or compensatory emphysema associated with the consolidation.

Cavities are usually recognized by their increase in transparency surrounded by the shadow of consolidation. If the cavity is large there will be little difficulty in recognizing it. If, however, the cavity is small or is resting on a large area of consolidation, or thickened pleura, it is less easily recognized. Under favorable circumstances, a cavity one-half inch in diameter can be made out.

Emphysematous areas are also noticeably transparent. A dense shadow may be found on one side of this area, but it is likely to have the other side continuous with more or less healthy lung tissue, and therefore can be differentiated from cavity.

Pulmonary Abscess.—This diagnosis can not be made entirely by means of the Roentgen ray, but when it is suspected, it can be more accurately located by the assistance of the rays. The radiographic appearances will not differ materially from those of cavity appearances, except that the surrounding area of consolidation is likely to be larger in proportion to the size of the cavity. Since the two may be associated, however, the difficulties are increased, and the findings must be carefully compared with the physical signs before operating.

Pulmonary Gangrene.—The remarks made in connection with pulmonary abscess will apply to pulmonary gangrene, except that instead of the area of consolidation being large and the cavity small, in this instance, the cavity is more likely to be large and the surrounding wall small. The conditions and the shadows will vary with the stage at which the examination is made. The odor will usually suggest the diagnosis, and the rays will be useful in locating the area for operation.

Pneumonia.—The fluoroscope shows a dense shadow in the affected area in pneumonia, and the movements of the diaphragm are diminished on the affected side, partly because of the increased density of the lung and partly, at times, because of an adhesive pleurisy. Williams was one of the first to apply the rays in the study of pneumonia. He depended almost entirely on the fluorescent screen. De la Camp[1] has recently made some interesting studies in pneumonia, in which he used the plate. He finds that the rays will localize the lesion more accurately than can possibly be done by any other means. This is especially true when the lesion is centrally located, or at a distance from the surface. It is in this class of cases that the rays will be found most useful, because it is in them that ordinary physical signs so commonly fail.

The Roentgen ray is also a most useful adjunct in the diagnosis of lesions not centrally located, especially when such lesions are situated beneath the scapula, or when small consolidations are surrounded by areas of compensatory emphysema. Compensatory emphysema assists in outlining the lesions by means of the Roentgen ray, because of its greater transparency, but offers considerable hindrance when the ordinary physical signs are depended on.

De la Camp found even in lobar pneumonia that the whole lobe is seldom uniformly consolidated. He often found by means of the rays an extension of the process into another lobe or into the opposite lung, when ordinary physical examination failed to reveal such lesions. The rays were found of great assistance in the study of the cases during the stage of resolution. In some cases, months were required for the lung to recover completely. The rays show lesions long after the physical signs are negative. In one case in which the patient complained of pain in the region of the heart, which persisted four months after the crisis, and after all physical signs were negative, the Roentgen examination showed a fibrous band about one-fourth of an inch broad binding the left side of the diaphragmatic pleura to the pericardial sac. Other symptoms of obscure origin following pneumonia may often be cleared up by the aid of a Roentgen examination. The same principles that have been described in the interpretation of tubercular negatives will apply to those of pneumonia. The areas involved, however, are usually larger and therefore more easily recognized.

Emphysema.—In a typical case of emphysema one is struck by the great transparency, which is greater than in any other condition of the lungs. This transparency affects both lungs, as a rule. The ribs will be found to extend outward from the spinal column at more nearly a right angle than normal. To distinguish the lesser grades of emphysema or to recognize local areas much more experience is necessary, for, then, one must keep in mind the normal Roentgenogram of the same age and general development, thickness of the chest walls, etc., and made under similar conditions.

Collapse of the Lung.—Collapse of the lung probably will not be recognized by means of the Roentgen rays when the area involved is small, but when the area is large it gives an appearance very similar to that of consolidation. It is more uniform and more sharply outlined than in tuberculosis, and it involves a lesser area than when pneumonic consolidation is present.

Thickening of the pleura is a common affection, occurring both independently and in association with tuberculosis of the lungs. This condition is recognized in the Roentgenogram as a uniform shadow of only slight density. The density will vary with the degree of thickening. This shadow is then seen to shade gradually at its edge into the surrounding clear space. If the surrounding lung is healthy, there will be little difficulty in recognizing a moderate thickening.

If, however, the thickened pleura is overshadowed by consolidated lung it becomes much more difficult, and at times impossible. Here experience alone will serve as a guide. In order to study the pleura accurately, both an anterior and a posterior plate should be made.

Pleural Effusion.—Pleural effusion is best recognized by placing the patient in the sitting posture, with the plate or tube posteriorly and the tube anteriorly. To make a Roentgenogram, place the patient in a chair with a large board resting against the back on which the plate is supported. The pleural effusion gives uniform but not a very dense shadow, occupying the lower part of the pleural cavity. The upper level has a curved but not irregular line. In uncomplicated effusion the shadow is even more uniform than that of a thickened pleura. The pleural thickening will also be recognized by its irregular border, which is never a line. The shadow is less dense than would be produced by consolidation of the lobe of the lung.

Pneumothorax.—Pneumothorax is recognized by the area of great transparency, greater than emphysema. This area is elongated in a vertical direction, as a rule, and occupies the lower lateral portion of the chest. Toward the median line may usually be seen the thickened pleura and the diseased lung. The heart is commonly displaced to the opposite side.

1. Fortschritte a. d. Gebiete d. Rontgenstrahlen, April 30, 1905.

Hydropneumothorax.—This condition is more common and forms one of the most interesting fluoroscopic pictures that can be found. In addition to the findings of pneumothorax, the fluid at the base of the pleural cavity may be seen to move with each respiration, or each movement of the body. If the patient is shaken, the fluid is seen to splash.

Hemothorax.—I have examined two cases of this character. Both showed a more dense shadow than would be produced by any other form of pleural effusion.

Consolidation and Pleural Effusion Combined.—In a case of this kind the shadow of the pleural effusion was seen to extend to the fifth rib on the right side and to the seventh rib on the left side. The consolidation of the right middle lobe showed through the effusion, and was distinctly more dense. Probably no condition will give more difficulty in recognition than consolidation surrounded by an extensive pleural effusion In this particular case there were the peculiar physical signs, tubular breathing and bronchophony extending throughout the area of pleural effusion. By making Roentgen examinations in all such cases we may find that consolidation of the lung is present and that it is the cause of the peculiar physical sign. This sign is probably due to the transmission of the larger sound waves from the bronchi, through the consolidated lung to the fluid in the pleural cavity, and thence through the chest walls to the air. The striking of two stones together will convince most people that fluids will transmit sound, but these sounds must be of the louder and coarser variety, therefore vesicular breathing is not transmitted through an effusion.

Subphrenic Abscess.—The difficulty in recognizing many of these cases is appreciated by all who have had much experience, and therefore any aid will also be appreciated. In a case examined about two years ago by means of the screen, I was able to see a decided displacement of the diaphragm upward as far as the ninth rib, and absolute immobility was noted on the right side. The left side of the diaphragm was seen to move two and one-half inches. The Roentgen examination will also eliminate some of the conditions with which this may be confused, such as pneumothorax, encysted pleural effusion or empyema.

CONCLUSION.

In general, the diagnostic value of the evidence obtained through the Roentgen ray will depend very much on the skill and the experience that the operator has had, both in Roentgen work and in general medicine. Glowing reports of cases, beautiful Roentgenograms and the enthusiastic claims of manufacturers lead many physicians to conclude that all they require to get good results is an instrument. This is as absurd as to conclude that all a physician needs to enable him to do good surgery is a set of good surgical instruments. Much harm has been done both in diagnosis and in treatment by the possessors of this erroneous idea. Much skill, both in the preparation and the interpretation of a negative, is needed. This is obtained only through daily practice. The ability to read a negative will also depend in great part on the physician's knowledge of general medicine.

Physicians' Business Methods.—If the physician would conduct his business on a legitimate foundation, and adhere to it by pushing methods, he would be able to reject commissions from druggists, could pay his bills like a gentleman, care better for his family and himself, and gain the respect of the community. Then his word in municipal and legislative worlds would be followed and appreciated.—*Northwestern Lancet.*

FIRST AID TO THE INJURED;

ITS IMPORTANCE TO RAILROADS FROM A HUMANE AND ECONOMIC STANDPOINT.

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THE RAILWAY ACCIDENT.

The instruction of railway employés in first aid to the injured is just in the advent of its practical employment. It is at this time a matter of comment with the secular press and the public that, in spite of modern inventions and appliances, the railway accident is apparently inevitable and, paradoxical as it may seem, is on the increase.

The block signal system, the patent coupler, the air-brake were all heralded as life-saving devices that would practically eliminate the danger to the employé and the passenger, and while unquestionably much has been accomplished by these inventions toward minimizing the casualty list of the modern railroad, yet other influences have counteracted their good results, and the fact remains that the railroads daily maim and kill a much larger per cent. of employés and traveling public than they should for their own moral and economic welfare.

In time of peace (a condition which, by grace of God, exists in our country with only trivial interruptions) the railway accident casualty list is rightly looked on as the chronology of the greatest menace to life and limb in our routine existence.

STRIKING STATISTICS.

Setting aside the millions of passengers carried on American railroads during the year and the proportion killed and injured, and eliminating for the sake of brevity the bystanders and trespassers killed and injured annually, I will consider the casualties among railroad employés alone.

Approximately 1,300,000 persons form the standing army operating the railroads of the United States. Statistics show that during the year 1904 the fatalities by accident among this number were one in each 500. One in every twenty-four was injured. Much has been said of the humane feature of first aid instruction among the armies of the civilized world, where it is now recognized as an indispensable and inseparable feature of the education of the soldier. From the humanitarian standpoint the same argument will hold with reference to the alleviation of the suffering among the victims of the inevitable railway disaster.

Space forbids an exhaustive review of this subject from the many points of advantage that can truthfully be ascribed to it, but I will say a word on what may be considered its more sordid advantage and the one which should be of paramount importance to the railroad, with whom the economic question is always one of vital interest.

For the past six or eight years I have given special study to negligence and railway accident law, and feel that I have become competent in its application to personal injury cases.

The steam railroads of the United States pay annually in damages to injured persons 00.74 per cent. of their gross earnings. This is seemingly a trifling decimal, but in coin and currency it amounts approximately to $14,000,000. In addition to this sum $7,000,000 is spent annually in the maintenance of a legal department, one-half of which expense may safely be attributed to the defense and settlement of personal injury damage suits.

These figures do not cover the total expense of injuries by common carriers by any means. This compilation pertains solely to the steam railroads, while the interurban electric lines and local street railway lines increase the above totals many fold. Particularly do the local street railways add enormously to the list. It is estimated that the Metropolitan Elevated of New York alone pays annually $2,000,000 for personal injuries and has constantly on hand nearly 6,000 suits of this nature. The Brooklyn Rapid Transit Co.'s annual personal injury budget is in the neighborhood of $1,000,000.

The ease with which evidence can be purchased and the ubiquity of the professional damage suit lawyer in the large centers of population gives the simulator and impostor a larger percentage of successful chances than with the transcontinental railroad. In accident to passenger or employé, no matter how trivial in nature, the damage suit sequel should always be borne in mind by the attendant.

NEEDS OF THE SITUATION.

The study which I have given railroad accident and injury from the forensic viewpoint has impressed on me certain deficiencies in railroad practice which, in my opinion, can be readily eliminated and which would result in great saving to the operating companies.

I am a firm believer that herein is a new field for the student of medical jurisprudence and surgical practice. I contend that the surgeon who is qualified in negligence law is in position to render the most effective and economic service as adjuster of personal injury claims.

There exists to-day in most of otherwise well organized railroads a lack of co-ordination between the legal and surgical staffs as a result of the one failing to grasp the importance of the technic of the other. This proposition operates with equal force conversely.

It is into this breach that the medicolegal claim adjuster can step to the assistance of both departments and with economy to the company. Dr. Pearce Bailey of New York,[1] an authority on forensic medicine, in a personal letter, says: "I believe that the very best adjuster that a railroad can have is a medical man with knowledge of negligence law."

I call the attention of railroad surgeons particularly to a close study of this subject. Under existing conditions the settlement of personal injury claims rests wholly with the legal department, and notwithstanding their best efforts the annual damage account shows increase with most railroads. Considering the enormous amount of money involved, it would seem to me to justify economical experimentation along other lines in search of a more effective method of control.

SKILFUL FIRST AID.

The National First Aid Association of America, under the presidency of the noble and renowned Clara Barton, is propagating the cause of first aid among railroads and other civil organizations and hopes soon to bear to the carriers of human freight the same quasi-official and inseparable relation that the Red Cross does to the military of the civilized powers.

Every railroad surgeon realizes the truth of the statement that in time of accident the uninitiated are as likely as not to do the wrong thing for the patient if any effort is made at all at temporary relief. A chew of tobacco from a syphilitic mouth applied to a mashed finger, or a filthy tarpaulin bound round a compound fracture are worse treatment than absolute neglect.

By minimizing the danger at the time the accident is received, and by proper, helpful first aid intelligently administered, the opportunity for infection with the microbe of the damage suit is reduced and saving to the company accrues.

INSTRUCTION OF EMPLOYES.

Combined with this service and in order to obtain the best results I advocate the instruction of employés in a few of the most essential points of negligence, which can readily be injected into the first aid instructions.

Dr. Pearce Bailey says in his book[1] that the very nature of a railroad accident (collision or derailment) renders all participants principals rather than witnesses to the injury of another.

Railroad attorneys and surgeons appreciate the difficulty often experienced in obtaining satisfactory evidence from employés in such catastrophes. The system which I advocate would include the instruction of employés in accident law points in a manner that would render them more competent witnesses.

In recapitulation I present to the serious consideration of railroad companies as a means of reducing very materially their damage claims:

(*a*) The instruction of trainmen and shopmen in first aid to the injured.

(*b*) The incorporation in this instruction of practical points on accident law.

(*c*) The employment in the claim department of a medical man, skilled in theory and practice of surgery and adept in negligence law, whose duty it will be to assist and advise counsel of the road, to bring about co-operation between the legal and surgical staffs of the closest possible nature, and last but not least, to be possessed of a fund of sound sense and a personality that will enable him to deal direct with the claimant.

I am confident that the adoption of the above plan will result in a net saving to a railroad company of from 10 to 20 per cent. of the amount now spent annually in payment for personal injuries, real and assumed.

1. Author of "Accident and Injury; Their Relation to Diseases of the Nervous System." (D. Appleton & Co.)

THE TREATMENT OF THE RESULTS OF INFANTILE PARALYSIS.*

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In none of the usual text-books can one find an orderly summary of the treatment of anterior poliomyelitis, after the subsidence of the acute stage. Even the orthopedic treatises do not group the varied conditions and present the manifold methods of treatment so that the general practitioner can readily decide what is indicated. This paper is an attempt to present the subject in a simple, concise manner, under varied headings, enabling one to refer quickly to the latest methods. Many operative procedures which have not proved satisfactory have been omitted. The literature is so extensive that only a few references are cited, although I have drawn freely from all sources.

The child which has suffered from an attack of infantile palsy is brought for advice because of:

1. Difficulty in locomotion.
2. Deformity.
3. Need of apparatus or of operation to improve existing conditions.

The causes of the deformity are:

1. The effects of gravity, e. g., toe-drop.

* Read at a meeting of the Roswell Park Medical Club, Nov. 6, 1905.

2. The unopposed action of the sound muscles and their contracture, e. g., flexion of the knee due to paresis of the quadriceps, with contracture of the hamstring muscles.
3. Functional use of the part, e. g., flat foot following palsy of the tibial muscles.
4. Laxity of the ligaments, e. g., knock-knee or subluxation of the femur.

The treatment may be divided as follows: The principles of treatment; special conditions and their treatment; shoes and braces; operations.

THE PRINCIPLES OF TREATMENT.

The early indications, when the results of the diseases are beginning to appear, are:

1. To increase nutrition of the muscles.
2. To prevent deformity.

The following general means are employed:

1. Massage and warm clothing.
2. Electricity, both galvanism and faradism.
3. Functional use, as far as possible, to combat not only the atrophy of muscle but also of bones and ligaments.
4. Passive motion of each joint to its full range daily to prevent contractures.
5. A light night brace if the extremity lies in an abnormal position during sleep.
6. A shoe or apparatus during the day to allow proper support during use. Also, according to Bradford and Lovett, to develop normal reflexes and muscular coordination. It is a general rule that when in the act of walking the extremity is thrown into any abnormal position, apparatus or other treatment is indicated.

The later indications, when treatment has been neglected, are:

1. To correct existing deformity, when present, often improving the mechanical conditions by a special operative procedure.
2. To support and keep the parts in their proper relation after such correction.

By the following means:

1. Correction.
   1. By massage and passive motion.
   2. By force while the patient is under an anesthetic.
   3. By a series of plaster casts at rapid intervals.
   4. By tenotomy.
   5. By one or more operations—i. e.:
      Nerve transplantation.
      Tendon transplantation.
      Arthrodesis.
      Osteotomy.

      These operative procedures are described collectively after the discussion of special conditions. They have been found of great value in recent years and are being employed to a large extent to the exclusion of mechanical aid.
2. Apparatus designed for the individual case.

SPECIAL CONDITIONS AND THEIR TREATMENT.

1. *Talipes equinus,* or toe-drop, is one of the commonest forms, in which the fore-foot falls down at the medio-tarsal and ankle joints, due to paresis of the entire anterior tibial group. If the deformity is not fixed by contracture, the treatment is as follows, beginning with the simplest plan and proceeding to severer methods:

1. An elastic garter attached above the calf or to one of the waistbands, ending in a tape, which is sewed to the vamp of the shoe.
2. A shoe extended far enough up the calf to keep the foot at a right angle.
3. A brace, consisting of one upright, a band above the calf and a joint opposite the ankle, allowing plantar flexion only to a right angle. The lower end attached to the heel of the shoe or to a footplate, which goes inside the shoe.
4. Nerve transplantation of the anterior tibial nerve and the branches to the tibialis anticus into the musculo-cutaneous nerve.
5. Tendon transplantation of a portion of the tendo-Achilles around the inner side of the ankle, attaching the reflected tendon just above the ankle joint to the tibialis anticus or extensor communis digitorum.
6. Arthrodesis of the ankle joint, i. e., an artificial stiffening of the joint to hold the foot at a right angle.

If the tendo-Achilles is short, preventing dorsal flexion, several courses may be followed:

1. When the leg is short and there is no discomfort from the contracture, it may be possible to build up the heel inside the shoe to conform to the bottom of the foot.
2. Usually forcible correction under an anesthetic is advisable, by manual force or with the Thomas wrench. If cavus is present, tenotomy of the plantar fascia followed by forcible reduction of the high arch is advisable. A plaster dressing for a few weeks and then the use of the brace mentioned above.
3. The tendo-Achilles may be lengthened by open incision and a portion of the tendon transplanted to the front of the ankle. Arthrodesis of the ankle joint may be performed in addition.

When the contracture is of slight degree, allowing dorsal flexion to a right angle, the patient may develop "genu recurvatum" or back-knee, in which the knee is overextended in order to bring the sole flat on the ground. This condition, when well-marked, requires a brace extending to the upper thigh or pelvis with a joint at the knee allowing extension to a straight line only. When the contracture is severe, the opposite condition will prevail, and the patient will walk on the fore-foot with flexion at the hip and knee. Operation on the foot is necessary, followed temporarily by the wearing of a brace.

2. *Talipes equino-valgus,* or toe-drop with flat-foot, is fairly common, due to palsy of the tibialis anticus, or tibialis anticus and tibialis posticus. The great toe is often drawn backward in the position of the hammer-toe because of the overaction of the extensor longus pollicis. The treatment:

1. A shoe to hold the foot at a right angle and support the arch.
2. A brace, as before, with flat footplate and stop-joint at right angle to prevent plantar flexion.
3. Nerve transplantation, as for talipes equinus.
4. (a) Tendon transplantation of the peroneus brevis behind the ankle under the tendo-Achilles to be attached to the periosteum of the scaphoid. Also the peroneus tertius across in front of the ankle and beneath the anterior tendons to be attached to the same point. It is an excellent plan to supplement these steps by arthrodesis of the medio-tarsal joint, or at least arthrodesis of the astragalo-navicular joint.
   (b) Another excellent method is to transplant the extensor longus pollicis to the scaphoid, running the tendon through a canal bored in that bone, turning it back and suturing the free end to the periosteum and to itself, thus forming a check-rein, which prevents valgus and toe-drop. Arthrodesis of the astragalo-navicular joint will further strengthen the improved position.
5. For an old case which shows considerable rigidity it may be necessary to do a cuneiform osteotomy, which includes the astragalo-navicular joint.

3. *Talipes equino-varus* is the most common of all the deformities of the foot. It is due to paresis of the anterior muscles with weakness of the external or peronei muscles.

1. A shoe by which the foot is held up and the forefoot swung outward at medio-tarsal joint, sometimes with a slight raise in the inner sole under the cuboid bone.
2. A Taylor clubfoot brace, which has a sole plate and a single inner upright so constructed that when the brace is on, the varus is corrected.
3. If passive correction is impossible, overcorrection by force, with or without tenotomy, or one of the following operations may be advised:
4. Tendon transplantation:
   (a) The outer half of the tendo-Achilles may be inserted into the distal ends of both peronei.
   (b) The extensor longus hallucis or the outer half of the tibialis anticus may be passed across the foot under the other tendons to be fastened to the periosteum of the cuboid bone. Arthrodesis of the calcaneo-cuboid joint is a useful adjunct.
5. In a rigid case of long standing a cuneiform osteotomy including the calcaneo-cuboid joint is indicated.

4. *Talipes varus* is due to palsy of the peronei muscles, which weakness allows the fore-foot to be drawn inward. Toe-drop, of course, is absent.

1. For a mild case, in which motion is free, a shoe which holds the foot correctly will suffice.
2. A tendon transplantation just as for talipes equino-varus.
3. Cuneiform osteotomy, including the calcaneo-cuboid joint.

5. *Talipes valgus* is a rare condition due to paralysis of the tibialis posticus in which a flat-foot is present.

1. A shoe in which the insole is raised to support the arch and the front axis is swung inward to correct the valgus. Or a flat footplate of the usual type.
2. Tendon transplantation and arthrodesis as for talipes equino-valgus.
3. Cuneiform osteotomy.

6. *Talipes calcaneus* is caused by paralysis of the calf muscles, so that the foot is drawn upward by the anterior muscles. The os calcis becomes dorsi-flexed, causing cavus or "hollow foot," and the heel becomes less prominent. The cavus is the worst feature and is especially difficult to overcome.

1. A shoe will often control a mild case.
2. A brace as for toe-drop with the stop-joint arranged to prevent dorsal flexion.
3. If the resistance to passive correction is strong, one may use a series of plaster casts in succession and then apply a brace. If the cavus and contracture are both fairly well marked, it is better to cut the plantar tissues, reduce the arch by strong force and apply plaster. Care must be used that the forefoot is not simply forced down, thus increasing the cavus.
4. Whitman has used very successfully his operation of removal of the astragalus. He also shortens the tendo-Achilles, transplants the peronei into the os calcis and displaces the os calcis well backward, thus bringing the foot into a good position. Astragalectomy gives a strong and useful foot and the resultant shortening is not of great consequence. No brace is necessary afterward.
5. Arthrodesis, before deformity is marked and resistant, is an excellent measure. The stiffening of the ankle joint tends to prevent deformity.

7. *Talipes calcaneo-valgus,* in which the fore-foot is drawn upward and to the outer side, is due to weakness of the calf muscles and the anterior muscles. It is fairly common.

1. A brace, with footplate and strap around the foot to keep the foot down on the plate, may be employed, but experience proves that it is sometimes impossible to keep the forefoot in apposition to the plate.
2. Tendon transplantation of the peroneus longus back of the ankle to be attached to the flexor longus digitorum, and the peroneus tertius across the front of the foot to be sewed to the tibialis anticus.
3. Removal of the astragalus.
4. Arthrodesis of the ankle joint, coupled with a transplantation of the peronei muscles.

8. *Talipes calcaneo-varus,* in which the fore-foot is drawn upward and to the inner side, is caused by the action of the anterior muscles overpowering weakened calf and exterior muscles. The treatment is similar to the last-mentioned condition.

1. A brace.
2. Removal of the astragalus.
3. Arthrodesis of the ankle joint with transference of the extensor longus pollicus to the outer side of the foot.

9. *Dangle foot* is that weakened state where all the muscles have suffered and the foot assumes any position. Such a foot, however, is capable of giving good support when properly braced.

1. A strong shoe, run high on the calf.
2. A brace, allowing dorsal flexion only.
3. Arthrodesis of the ankle joint is especially useful for this deformity.

10. *Contracted foot* is now a well-known deformity, which follows some years after an affection of the anterior muscles. The attack has been slight and often overlooked. The stronger muscles have gradually produced a high arch, or cavus, while the tendo-Achilles has shortened enough to prevent dorsal flexion beyond a right angle.[1]

1. A shoe with a high arch.
2. Where there is much complaint of pain it will be necessary to divide the plantar tissues which have contracted, apply considerable force to reduce the arch, divide the tendo-Achilles and put the foot up in a corrected position in plaster. Later the patient wears a proper shoe.

11. *Paralysis of the anterior thigh muscles,* or quadriceps extensor, prevents the patient from extending the leg. The standing position is insecure, as he is apt to fall forward. In walking he has to swing the lower extremity forward, and often holds the hand on the front of the thigh to keep the knee from sudden flexion. If overextension is possible, back-knee is often developed, i. e., a locking of the joint by overextension while taking a step, the strain coming on the posterior tissues and crucial ligaments. If the hamstrings are shortened, the gait is very insecure.

1. A Thomas knee brace, or ordinary brace, with external and internal bar, ending at the heel. Either no joint is allowed at the knee or else a lock joint, which has a mechanism to allow flexion in the sitting position. If there is a tendency to back-knee, a strap should be passed back of the knee to prevent hyperextension. Often some foot condition will require correction also.
2. When there is resistant flexion of the knee, repeated plaster casts may effect improvement. Or a tenotomy of hamstrings and fascia and forcible correction. It must be remembered that a peroneal nerve may be overstretched and a temporary paralysis caused by the use of too great force or by a plaster cast which straightens too suddenly. It is a good plan to cut the cast as soon as applied in each case, as the peroneal nerve, on account of the binding of its branches, is particularly vulnerable.
3. Tendon transplantation is now generally employed instead of tenotomy. The hamstring tendons are brought around the femur and sewed to the quadriceps tendon at the sides or just above the patella. The biceps is swung on the outer side and the semitendinosus and the semi-membranosus on the inner. Muscle grafting of the sartorius into the quadriceps is an adjuvant.

1. Whitman: Orthopedic Surgery, p. 534.

12. *Knock-knee* is a common result in infantile paralysis due to general weakness and laxity of ligaments. It may be corrected by a knock-knee brace or Thomas knee brace, or by an osteotomy of the femur above the condyles.

13. *Paralysis of the hip muscles* is regularly accompanied by palsy of other muscles below. If all the muscles are affected, dangle thigh results, but the sartorius and tensor vaginæ femoris are rarely involved. The position assumed is one of flexion and outward rotation of the thigh, with lordosis of the back and flexion or hyperextension of the knee. Weakness of the ilio-psoas causes loss of power of flexing the thigh. Adductor palsy makes the patient lift one thigh over the other by the hands if he wishes to cross his legs. Gluteal paralysis is the worst condition because the patient can not stand.

The treatment of palsy of the thigh muscles is by apparatus only. A brace with a pelvic band, with or without perineal bands, extending to the foot. For example, a Thomas knock-knee brace with pelvic band added. For both limbs, double braces are employed. For paralysis of the gluteal and back muscles a leather jacket with double braces is necessary, and if there is no power in the glutei, crutches also have to be used. This very disabling condition is rare, and sometimes in later years enough power returns or is developed to allow the case to walk without crutches. A free joint is allowed in the braces opposite the hip joint. Contracture of the tissues about the anterior spine, causing flexion of the thigh, necessitates a tenotomy of the same.

14. *The muscles of the trunk* are, as a rule, exempt, but may be severely attacked in cases showing a general involvement. Weakening of the abdominal muscles results in lordosis and a prominent abdomen, for which treatment is rarely required by support or jacket. General involvement of the back muscles induces kyphosis, chiefly in the dorsal region. Lateral curvature may be due to a short leg, or the attitude assumed from palsy elsewhere, or to the fact that the disease has attacked mainly one set of erector spinæ muscles. In this last case, the convexity of the curve looks to the stronger side, because of the collapse of the chest wall and atrophy of the tissues. The stronger side develops and expands. The treatment of such curvature is by jacket, electricity and special exercises.

15. *In the upper extremity* Tubby has devised an operation for the relief of paralysis of the serratus magnus, causing winged scapula. An incision is made over the outer border of the pectoralis major, a part of its sternal portion is cut from its insertion into the humerus and subdivided. These subdivisions are transplanted into the four or five main serrations of the serratus magnus.

For deltoid paralysis, causing inability to abduct the arm, Hoffa transplants part of the trapezius into the deltoid, selecting appropriate adjoining parts.

For general involvement of the shoulder joint muscles, a shoulder cap may be applied or an arthrodesis of the joint may be performed, and the forearm supported in a sling to prevent dragging on the shoulder and dislocation of the shoulder joint.

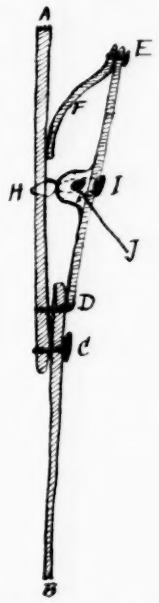
Weakness of the biceps may be combated by using a brace to hold the forearm at a right angle, or a portion of the triceps may be swung around the humerus and inserted into the biceps.

Weakness of the triceps has been modified by transplanting a part of the biceps into the triceps.

In the forearm, a flaccid condition usually exists. If contraction is present it resembles the hemiplegic type, with pronation and flexion of the hand. In either condition the following tendon transplantations are valuable:

The pronator radii teres may be made to act as a supinator. Two incisions are made, one over each condyle of the humerus extending downward. The pronator is isolated, passed through a tunnel and fastened to the external condyle.

At the wrist the flexor carpi radialis is passed around the radius and sewed to the extensor carpi radialis longior, and the flexor carpi ulnaris is passed around the ulna and fastened to the extensor carpi ulnaris, thus providing for extension of the hand. The flexor sublimis digitorum tendons may be passed through the space between the two bones above the pronator quadratus, and fastened to the tendons of the extensor communis digitorum. This should improve the power of extending the fingers. These last operations are very valuable in other conditions than simply infantile paralysis.



Lock joint for the knee. AB, the uprights; C, free joint at knee; DE, spring lock; at D a projecting pin slips through the uprights at full extension, locking the joint; F, spring; HI, base, attached to the upright, projecting solidly through to I, but pierced at J by transverse axis on which DE, moves.

SHOES AND BRACES.

There are a few practical points to be borne in mind when ordering shoes or braces. The object of a special shoe is to hold the foot in the best possible position and correct the deformity. If valgus is to be overcome, the front axis of the sole which reaches from the center of the foot to the toes, should be swung well inward, and a raise of leather built in the insole to raise the arch. If varus exists, the front axis should be swung outward, until the front and rear axes nearly form a straight line. A slight raise may be placed in the insole underneath the junction of the os calcis and cuboid to evert the foot slightly. The uppers often need strengthening opposite the ankle joint by whalebone or other means. It is often a good plan to place the foot on a square of paper, passively correct the deformity and then draw an outline of the sole, to serve as a guide as a ground plan of the sole if the shoemaker is not experienced. The shoes should be made to lace, and they can be made to fit more snugly if the lacing is carried down over the toes, instead of stopping back of the toes as in an ordinary shoe.

When ordering braces one may be guided by a descriptive price-list as issued by the well-known firms. As many of the braces for cases of infantile paralysis have to be devised for the individual patient, some practical points are of value. The patient lies on a large square of blank paper, and an outline of the extremity and perhaps the pelvis drawn with pencil. The position of the joints and their exact distance from the sole indicated. The position of the calf, thigh and pelvic bands are outlined with pencil and the exact circumference of the extremity at these points given. The joint at the knee is often omitted or else a lock joint substituted. Artificial muscles of rubber are of no permanent value, as they soon wear out and give trouble. At the ankle, stop joints are often used, according to the presence of talipes or calcaneus. Simplicity and lightness of weight should be in mind while planning the support. The lower end may be attached to the sole of the shoe on the outside or inside, or to a sole plate of metal which is slipped in the shoe. A short description of the patient, his condition, weight, etc., should be added.

The illustration shows a new form of lock joint for the knee, designed by a boy 10 years old, a brother of a patient who had had anterior poliomyelitis. By pressing the handle of the spring at E the pin is moved outward and the joint unlocked, allowing the case to sit comfortably. On arising and extending the leg, the pin slips into the openings made for it through the uprights and the joint is locked. The advantages are simplicity, cheapness and the fact that it does not get out of order.

OPERATIVE TREATMENT.

I. The use of force, either manual or instrumental, followed by a plaster dressing, will usually overcome resistance to passive correction in these cases, because the tissues are not so firm or the deformity so obstinate as in the congenital malformations. Of course, the patient is anesthetized. A succession of plaster casts at rapid intervals, each correcting a little more than the previous will often suffice. Tenotomy is now rarely employed, because tendon transplantation is to be preferred. At the hip tenotomy of the tensor vaginæ femoris, sartorius, etc., is the only available operation when the thighs are held in flexion.

II. *Nerve transplantation, nerve grafting* or *neuroplasty* has come into use during the past eight years, since the time that the distal stump of a paralyzed musculo-spiral nerve was grafted into an intact median nerve with excellent result. Soon followed the successful grafting of the spinal accessory into the facial. The idea of the operation is to restore power in paralyzed muscles by connecting them once more with the spinal cord by functionating nerve fibers. It is applicable in only a few regions, and at a certain time, i. e., after a lapse of time which shows that no further regeneration will take place, in a region where a nerve, or part of a nerve, may be borrowed without doing great damage. In other words, where one set of muscles is paralyzed, part of the power of an adjoining nerve is transferred. It is an operation to precede tendon transplantation and to make that procedure unnecessary. If the nerve grafting fails, as it is supposed to do in about half the cases, then tendon transplantation is resorted to. There are two main types of transference. Peripheral implantation is that method in which the diseased nerve is cut, and its distal stump drawn over and sutured in a longitudinal slit in the healthy nerve, the end pointing centrally. Central implantation is the other type, in which a part or the whole of a healthy nerve is cut, the central end drawn over to the diseased nerve and sutured in place, the end pointing to the periphery. In this operation eye instruments are used to manipulate the nerves, longitudinal slits instead of transverse ones are made, and longitudinal sutures instead of transverse are inserted in order to avoid bruising and constriction. One or two incisions of sufficient size expose the operative field. The respective nerves are carefully defined and dissected free. The nerve which is to be cut and swung over is divided at such a point that it may be united without tension or traction to the other nerve. That is to say, the free end must be long enough to reach the junction and be sutured without the use of force. The end is inserted in a longitudianl slit, held there by fine longitudinal catgut sutures, and the sheaths may be united also by a few fine silk sutures. Sometimes, instead of a typical central implantation, the diseased nerve may also be completely divided, and the two cut ends, i. e., one end from each nerve, brought directly together and anastomosed, in this way discarding the slit method. The following sites have been used for this operation:

1. For paralysis of the tibialis anticus. An incision is made from the head of the fibula downward over the peroneal nerve. Dissection carried through the peroneal muscles reveals the nerve, the several small branches running to the tibialis anticus, and the division below into the anterior tibial and musculo-cutaneous nerves. This is the general rule, as dissection shows that the muscle is supplied by separate branches high up, and not by the anterior tibial nerve. These three or four fine branches are cut, close to their origin, brought downward and sewed to the musculo-cutaneous, the ends pointing upward. It is Spiller's advice to take this nerve, as it is more apt to be healthy than the anterior tibial. It is the experience of the writer, in doing these operations on the cadaver, that the one difficult part is the suturing in place of the nerves. Much depends on the accuracy with which this is done.

2. When the entire anterior group is palsied, the anterior tibial may be likewise inserted into the musculo-cutaneous. Or when the peroneal group is affected, the musculo-cutaneous may be sewed to the anterior tibial.

3. At the bend of the knee, part of the external popliteal nerve may be inserted into the internal popliteal for paralysis of the anterior and external groups.

4. In the upper thigh, for paralysis of the quadriceps, the superficial branch of the obturator may be taken to replace the anterior crural. Two incisions are made, one over the femoral artery and the other to the outer side of the tendon of the adductor longus. The anterior crural is easily found and the branch to the sartorius is isolated and held aside, as the sartorius is rarely involved. The obturator is found by separating the adductor longus and pectineus, and defining the nerve as it crosses on the adductor brevis. The obturator is cut low down, to allow length for transposition. The central end is passed through a tunnel over the main vessels, and inserted into the anterior crural, the stub pointing peripherally.

5. At the elbow the distal stump of a paralyzed musculo-spiral may be swung around the elbow and fastened to the median.

6. In the forearm the ulnar, median and radial may be crossed, as seems indicated.[2]

III. *Tendon transplantation* has for its primary object

2. For the subject of neuroplasty refer to THE JOURNAL A. M. A., Jan. 21, 1905, p. 169; Annals of Surgery, May, 1903; and American Journal of Orthopedic Surgery, Aug., 1904.

the distribution of the remaining power about a joint, so that muscular strength may be exerted in all directions. For example, if the quadriceps at the knee is paralyzed, some of the hamstrings are borrowed to replace it. The secondary object is to use a tendon as a bridle or check rein, to prevent deformity and enable one to dispense with a brace. For example, in a case of paralytic flat-foot, a tendon may be passed through a canal in the navicular bone and fastened there, to hold the arch up and prevent dislocation of the astragalus. This operation is intended to improve conditions only, and must not be considered as a curative measure. It is most effective when one group of the weaker muscles is affected, because a weak muscle can not be made to do the work of a stronger one. For example, the prognosis of a varus or valgus is good, but no transposition can do the work of the calf muscles, when calcaneus exists. Tendon shortening is included under this heading, i. e., when one overlaps and shortens several tendons about a joint, thus strengthening but not transplanting. Muscle transposition is another form, in which muscle is sewed to muscle. An illustration occurs at the knee, where the sartorius can be inserted into the quadriceps above the patella. Of late there has been a great tendency to add arthrodesis to a transplantation as often as possible, as a stiffened joint may so supplement the advantage gained that a practical cure instead of a relapse will be the result. Many writers now claim that arthrodesis is the main operation and the tendon trasplantation is secondary. There is no doubt but that the combined procedures are of great value, especially at the ankle and medio-tarsal joints. Judgment as to the result of the operation should be reserved until some years have elapsed, as cases that promise well at the end of six months may relapse later. It is sometimes astonishing to see how a muscle will hypertrophy and increase in power, when it is given an opportunity to work at advantage with all resistance to passive motion removed. In deciding about an operation and the selection of tendons, one must remember that all cases differ as to the degree of paralysis, and that each case has to be individually studied, and a decision reached according to present conditions. It is not wise to operate until two years have elapsed since the attack, as some power may return in muscles that appear completely atrophied. The writer has seen power reappear to a slight degree, but enough to be of value, as much as eight years after the attack. Before operating, it is a good plan to put on a plaster cast for two weeks to accustom the parts to their new position, and prepare the tendons for transposition. Resistance to passive correction should be overcome by force either before or at the time of operation, so that the plaster dressing need afford fixation only, and not corrective force. The following points are to be borne in mind while operating. Asepsis, prevention of hemorrhage, the use of healthy material and union of tendons under tension. Muscle that has a dark red appearance is healthy, while a yellowish color signifies fatty degeneration. It has been proved that it is best to sew the transferred tendons so that they are slightly on the stretch. They will do better work later on after union is firm, than if they have been fastened without tension.

An Esmarch bandage is applied to provide a bloodless field. One, two or three longitudinal incisions are made over the sites as may be indicated. The tendons to be transposed are dissected free, from their insertion upward for some distance. They are cut at their insertion, and a temporary suture inserted in their free ends to prevent them from slipping away. By blunt dissection a canal is made, reaching to the point where the tendons are to be attached. This channel should not turn at a right angle, but at an acute angle, so that the tendon will not have to act around a sharp corner. The tendons are drawn through the canal, and then fastened in their new position. Three methods are in common use. They may either be passed through button-holes in other tendons and sewed to them, or better, stitched to the periosteum or passed through a small canal made in the bone, turned backwards and sutured to themselves and to the periosteum. The firmest grip possible is by the last method. A periosteal fixation usually gives a firm hold. The tendons of paralyzed muscles are apt to stretch, like old elastic. If the tendon to be transposed is too short, it may be lengthened by several silk strands. Experiments have proved that there is likely to be a formation of new tendinous tissue along such silk strands which will give a firm grip and a prolongation of the sinews to its new site. Fine silk sutures should be employed, and care taken to appose as much surface as possible that there may be the firmer union. Sterile silk is well borne by these structures as in the peritoneal cavity. The sheaths of the tendons are sewed with fine catgut. The skin is united with catgut and no drainage allowed. Plaster of paris applied for six weeks, removal of this being for dressing only. For a period of at least six months, great care should be taken that no excess of strain is brought to bear on the transposed tendons, and artificial support should be provided. This after-treatment is of chief importance and is the factor which often decides the result. Massage, electricity and medical gymnastics are appropriate aids.

It is a good plan to precede the operation on the patient by the same procedure on the cadaver. Some practical points shown by dissection on the cadaver are the following: The tibialis anticus, when swung over to the cuboid bone, can hardly reach its insertion, and has to be elongated by silk strands. The extensor brevis digitorum overlies the cuboid bone and calcaneo-cuboid joint, and must be drawn to one side in transplantation or arthrodesis. The tendo-Achilles is likewise short, when it is brought to the front of the ankle joint, and must be inserted above the joint. The peroneus brevis reaches the scaphoid bone very nicely when passed back of the ankle. The peronei tendons, posterior to the external malleolus, cross each other, and one must determine by pulling on the tendons, which is which. The tendon sheaths in this locality must be kept as intact as possible, to prevent the unused tendon from dislocation forward over the malleolus. A canal can be bored through a bone in children by a small curved trochar and canula, and then the tendon can be drawn through the canula without injury.

IV. *Arthrodesis* has for its object the artificial stiffening of a joint. It is especially for the poor, as it allows the patient to dispense with apparatus. It is very valuable as an adjuvant in doing a tendon transplantation. The bones must be fairly firm, or, in other words, the child should be 8 or 10 years old before it is attempted. The foot is its especial province. The ankle joint is stiffened for equinus or calcaneus, and the medio-tarsal joint for varus or valgus. Opinion is divided about the knee joint as to the advisability of making the lower extremity stiff throughout, when a fall might fracture one of the bones, brittle from trophic changes. The operation has been performed at the shoulder.

An Esmarch bandage is applied. An incision exposes the joint, which is opened. All of the cartilage is removed and the bone laid bare, by spoon, or by the use of chisel and hammer. Some operators remove a thin slice of bone to entirely eradicate the cartilage cells, which, by reproduction, would favor return of motion. The soft parts are sutured with catgut, and a plaster dressing applied. Strain must be avoided for six months or more, as after transplantation. In old cases of calcaneus, astragalectomy is more serviceable than arthrodesis.

V. Linear osteotomy or cuneiform osteotomy are too well known to require a special description. They are sometimes indicated at the tarsus, knee or hip in severe cases.

In closing, emphasis is laid on the fact that the results of infantile paralysis are of a mechanical nature. It is often possible to predict what deformity will ensue, according to the groups of muscles involved. The general practitioner has a duty to perform which has been too much neglected in the past, i. e., to prevent deformity. Each case differs from the others in the area involved and the severity of the paralysis. The treatment for the individual patient should be instituted only after a careful examination to determine what is indicated. The great tendency, of late years, has been to operate more often and to dispense with apparatus. The instrument maker is no fit person to have charge of such cases. Patients must be watched for years, at intervals of six months, because conditions change and vicious habits may be adopted.

DISORDERS FROM EYE-STRAIN.*

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Notwithstanding that much has been presented on this subject, it is a lamentable fact that a large percentage of the medical profession fail to appreciate the nature and consequences of eye-strain. Thousands of patients are annually being subjected to a medicinal treatment of reflex disorders, arising from eye-strain, while the etiologic ocular defect remains unappreciated by both the patient and his attending physician. Fortunately, this state of affairs does not obtain throughout the profession. Scattered here and there, like oases in a desert, are physicians who, having personally suffered (like the writer) from the torture of ocular defects or intelligently observed them among their clientele, are appreciative of their significance and rational treatment. When it is learned on investigation, however, that a large majority of text-books and monographs on internal and nervous disorders are silent as to the importance of eye-strain in the production of certain neuro-gastric diseases, it is small wonder that the etiologic ocular defect is so often unappreciated by the general practitioner in the treatment of these disorders.

The usual symptoms of eye-strain may, for the sake of brevity, be grouped under three headings: Phenomena of (a) muscular asthenopia, (b) conjunctival and retinal irritation, (c) defective vision. With the former condition the patient complains of pain or pulling sensation within the orbital cavity, temporal or frontal regions, or within the eyeball itself, which is due to an abnormal tension of either the extraocular or ciliary muscles or both. With irritation of the conjunctiva, however, the eyeball and lids become injected, aggravating any existing acute or chronic inflammation of the lids, and attended with a hyperlachrymation which may be so pronounced as to simulate epiphoria due to stenosis of the lachrymal duct. The symptoms of asthenopia, irritation and blurring of vision may obtain constantly or only on doing near work, but are usually accentuated by a close application of the eyes, e. g., sewing or reading. Aside from myopia, normality of sight does not exclude the existence of refractive errors, especially the more moderate degrees of hypermetropia and astigmatic conditions, particularly in the young who enjoy the necessary accommodative power to overcome the defect. With the advent of presbyopia, however, when the accommodation becomes physiologically impaired, the refractive error usually becomes manifest with an attending lowered distant vision. So far as symptoms are concerned, furthermore, it is impossible to differentiate an imbalance of the extra-ocular muscles from an error of refraction, excepting when an extra-ocular muscle becomes so weakened that it can no longer cope with its opponent, when a diplopia occurs or it is corrected by an inclination of the head. Sensations of dizziness and nausea frequently obtain as a result of these conditions, although they may also be produced by astigmatic conditions, particularly when the axes exist at oblique angles.

The normal eye often tires with a physiologic amount of work, but when a prolonged effort is made to employ a defective visual apparatus the task becomes not only unpleasant, but oftimes distressing to a marked degree with more or less reflex disturbances, depending on the nature and extent of the ocular defect, together with the systemic condition of the individual. Hence, a muscular or refractive defect which produces few or no symptoms in one instance may so affect the health of another person that a serious impairment of the vital functions occurs. The heart, which we are wont to regard as unceasing in its work, enjoys a longer period of rest than activity, but in instances of eye-strain the correcting muscles are under a constant tension during all the hours of visual activity. So long as there obtains a sufficiency of reserve force to supply this continued expenditure of nervous energy, the symptoms are latent, but finally in many instances an exhaustion occurs, accompanied by manifestations of a varied symptomology.

It is to the importance of these systemic disturbances resulting from eye-strain, therefore, that I wish specially to direct attention. As previously indicated, these disorders are so varied, complex, and oftimes pronounced that the symptoms of the causal ocular defect are quite unappreciated, in many instances, by both the patient and his attending physician, until by accident or design the etiologic condition is recognized and corrected. Thus it is that the ophthalmologist frequently meets with instances of chronic headache, gastric disorders, nervous exhaustion, insomnia, epilepsy, chorea and hysterical conditions which have resulted wholly from eye-strain, and continued in spite of the medicinal treatment which has been so erroneously employed, but have obtained permanent relief after the correction of an ocular defect.

To illustrate briefly the validity of my contentions in this direction, I append a few characteristic instances of reflex disorders which have often been encountered in my practice as an ophthalmologist:

CASE 1.—Mrs. H. W. W., aged 35, presented the following history: Since childhood she has suffered from nearly constant headaches and a nervous condition, although she has

* Read before the Michigan State Medical Society at Petoskey, June 28, 1905.

employed the advice of several physicians with no relief. She finally concluded that trouble originated in her eyes, inasmuch as near work increased her symptoms, and consulted a prominent oculist, who gave her the following lenses for constant use: O. D. + .50 + .25 x 90, O. S. + .75 x 90. Obtaining only partial improvement, she finally consulted me, when an examination of the eyes revealed the following refractive condition: O. D. — .25 + .75 x 90, O. S. — .37 + .88 x 90. Since wearing this correction she has enjoyed a complete cessation of headache and a gradual improvement in general physical condition during the past two years without the use of internal medication.

CASE 2.—Miss G. M., aged 30, for several years has complained of constant and intense headaches, pain in eyes, and nervous symptoms. Has received medicinal treatment from several physicians without avail. An examination of eyes showed the following conditions: O. D. + .50, O. S. + .25 + .25 x 90. Right hyperphoria 2° (tendency of right eye to turn upward). Glasses were prescribed to be worn constantly, with which the muscular imbalance was corrected as well as the refractive defect. During the following year she informed me that the former symptoms had entirely disappeared, but a year later the symptoms began to return, when an examination showed that the hyperphoria had increased to 4°, for the permanent correction of which I advised a graduated tenotomy, but this was declined, so the former prismatic correction was increased to meet the condition, since which time she has not come under observation.

CASE 3.—Mr. P. B. J., aged 25, presented history as follows: For several years he has complained of constant dull frontal and occipital headaches, pains within the orbit, loss in weight, and pronounced nervous symptoms which were increased by a prolonged use of the eyes. Riding on the cars, attending the theater, or watching rapidly moving objects invariably increased the above symptoms, attended with a sensation of nausea. He had employed the advice of several general practitioners, without permanent relief. Was wearing O. U. + .50 sph. An examination of the eyes revealed the following conditions: O. U. + .50 x 90, and 12° of esophoria (tendency of eyes to turn inward). Advised a graduated tenotomy of both internal recti, which was accordingly performed, leaving but 1° of imbalance of muscles. So great was the relief afforded by the operation and correction of the astigmatism that the patient was enabled to follow with comfort his clerical work, and rapidly gained in vigor and weight, without the aid of medication.

CASE 4.—Mr. G. S. M., aged 31, consulted me, presenting the following history: Marked headaches, neurasthenia, a growing insomnia, and gastric disorders. During the previous ten years he had consulted several general practitioners and oculists regarding his condition, but had obtained no permanent improvement. To account for the symptoms one physician informed him that he had "congestion of the brain," while an equally mistaken prominent oculist corroborated this diagnosis because a "retinitis" was found to exist! Examination of his ocular condition revealed to me the following conditions: O. D. + .25 + .25 x 90, O. S. + .50, and 18° of esophoria. When I informed him that, in my opinion, his condition was due largely, if not wholly, to the imbalance of his extraocular muscles, he was astonished, as none of his medical advisors had suspected or made a test for heterophoria (imbalance of eyes). I advised a graduated tenotomy of both of his internal recti, which was performed. Although previous to the operation and wearing of correction for his refractive error, he was particularly distressed by insomnia, during the past two years he has frequently expressed his gratitude for the great relief afforded him; and is now carrying on his multitudinous duties with satisfaction.

CASE 5.—Mrs. M. S. W., aged 35, presented the following history: Since childhood she has been subject to periodical headaches, which she regarded as hereditary, inasmuch as her mother and an aunt had suffered similarly without relief. During the past few years she has complained of heart trouble, dyspepsia, marked constipation, and periods of extreme nervousness. While suffering from an attack of headache an uncontrollable nausea and vomiting would occur which so exhausted her strength that she was often compelled to keep her bed for several days. Several physicians had been consulted regarding her condition, but no permanent relief was obtained. Finally her refractive symptoms became so evident that she was led to consult me regarding her ocular defect. Examination of eyes revealed the following facts: O. D. — 1.00 + 2.25 x 60, O. S. — .75 + 2.25 x 120. Normal balance of extraocular muscles. The above correction was prescribed to be worn constantly. Although she experienced in the beginning some difficulty in wearing the glasses, she soon became accustomed to them; and although several years have elapsed since this defect was corrected, she has enjoyed a complete cessation of her former distressing symptoms.

CASE 6.—Mr. J. R., aged 43, a man of broad scientific attainments, presented the following history: During the past ten years he has suffered frequently from periods of nervous exhaustion, gastric disorders, constipation, and a marked insomnia, which of late had become more pronounced in spite of the advice and treatment of several physicians. He had concluded that possibly his symptoms might originate from an eyestrain, and accordingly consulted me in regard to his condition. An examination of the eyes showed the following conditions: O. D. + 1.00 + .25 x 180, O. S. + .75 + .25 x 180, and 1° of left hyperphoria and 2° of exophoria (tendency of eyes to turn outward). Glasses were prescribed to be worn constantly, correcting both the refractive and hyperphoric conditions, while prismatic exercise was advised for improvement of the weakened internal recti. A marked betterment in both the ocular and systemic disorders was obtained thereby, but a couple of months later he again consulted me, stating that he was still conscious of some strain in the use of his eyes. A further test of his condition revealed the fact that the hyperphoria had increased another degree while the exophoria had disappeared. Being persuaded that my patient was suffering from a latent hyperphoria, the prismatic correction in his glasses was gradually increased until the imbalance became stationary at 4°, when I advised a graduated tenotomy of the left superior rectus to permanently correct the defect. At a subsequent date the operation was performed, leaving only ½° of hyperphoria, while the lateral recti were in balance. The cessation of his former systemic symptoms under this treatment was interesting and gratifying, both to the patient and myself. While previous to the correction of his ocular defect he was confined strictly to a simple diet of bread and milk and suffered greatly from his insomnia, in the course of a few weeks he was able to relish an ordinary mixed meal, his bowels became more regular, the insomnia disappeared, and a rapid increase in weight was observed.

CASE 7.—Mr. M. H. G., aged 28, presented the following history: During the past ten years he has been suffering from headaches, gastric disorders, and nervous symptoms, attended with a marked loss of weight. While in college some six years ago his symptoms became so marked that he was compelled to abandon his work. He placed himself under the care of several physicians, but obtained no relief until by accident he learned from a fellow-student, who had suffered a similar experience, that possibly his physical condition was due to an ocular defect. He accordingly consulted a prominent oculist, who gave him for reading O. U. + 1.00 + .50 x 90, from the use of which he obtained some relief. After wearing this glass for four years he came under my care, and an examination of his eyes showed the following conditions: O. D. + .25 + 1.00 x 90, O. S. + .37 + 1.00 x 90, and a slight exophoria. He was instructed to wear his correction constantly, since which time his symptoms have entirely disappeared, and he is in robust physical condition. No medication has been employed by him since wearing this correction.

CASE 8.—Mr. C. A. H., aged 26, gave the following history: Previous to entering college he had passed the greater part of his life in out-of-door pursuits, but during the past two years, since devoting himself to study, his health has gradually failed until now he complains of a drawing sensation about the head, dizziness, gastric disorder, and a marked nervous condition. No definite refractive symptoms were noticed in use of eyes. He has consulted several physicians without obtaining permanent improvement. Examination of eyes showed the following

conditions: O. D. + .25 + .62 x 90, O. S. + .25 + .50 x 90, and 3° of exophoria. Prescribed above glasses to be worn constantly, in addition to which I advised employment of prismatic exercise for the improvement of his weakened internal recti. Within one month he noticed a marked betterment in his physical condition, which, without the use of internal remedies, continued to so improve that he was finally enabled to pursue his professional course of study with satisfaction.

CASE 9.—Miss E. S., aged 16, presented a history as follows: Since 6 years of age has had indistinct vision for distance and difficulty in reading which has gradually become worse, attended with a rolling of eyes, twitching of lids, spasmodic contortions of the face and shoulders, and an increasing nervous irritability. Examination of the eyes revealed the following conditions: O. D. — 3.00 — 1.50x 180, O. S. — 3.00 — 2.00 x 180, and 1° of left hyperphoria. She was instructed to wear the above correction constantly whereby the muscular imbalance was also remedied by decenteration of left lens. In the course of a year, without the use of any medication, the above symptoms practically disappeared and she gained markedly in weight. Two years later, however, she began to notice an irritation of the eyes, a blurring of distant vision, and some twitching about the eyes. Examination showed the following conditions: O. D. — 4.00 — 1.25 x 180, O. S. — 4.00 — 2.25 x 180, and 3° of left hyperphoria instead of above. With the correction of these defects the symptoms again disappeared in the course of a few months.

CASE 10.—Mr. C. L. C., aged 28, gave the following history: During the past five years he has complained of a pulling sensation in his eyes, feeling of constriction about the head, gastric disorder, loss of weight, and a marked nervous exhaustion, which finally terminated in an acute attack of melancholia. During the past six months he has been unable to use his eyes for ordinary reading. An examination of his ocular condition revealed the following: O. D. + 3.00 + .88 x 90, O. S. + 2.00 + .75 x 90, and 4° of esophoria. A partial correction was prescribed for constant use, and gradually increased until he was able to employ the full correction. In the course of a few months his former symptoms practically disappeared, and he was enabled to carry on his former cupation with satisfaction. Occasionally he would notice a return of some of his symptoms; but these were readily traced to a malposition of his lenses, due to a bending of his frame, on the correction of which the symptoms would disappear.

In conclusion, I wish to emphasize the fact that the foregoing illustrative cases of eye-strain are not rare in occurrence nor are the reported favorable results of ocular treatment exceptional, but they are frequently being encountered and successfully treated by those ophthalmologists who are doing thorough, scientific and conscientious refractive work. In contradistinction to these facts, however, I am sorry to admit that there is an alarming amount of humbuggery practiced in the "fitting of glasses." In making several thousand examinations of the eyes I have found that over 90 per cent. of refractive errors are astigmatic, one-quarter of a diopter or more, while 50 per cent. of the lenses prescribed from various sources are merely spherical. In other words, probably 75 per cent. of the glasses worn to-day do not accurately correct the ocular defects of the wearer, not taking into consideration muscular imbalances. When it is remembered, however, that the greater percentage of these glasses are furnished by pseudo-specialists, "jewelers and opticians," "optical specialists," "doctors of optics," "optical companies" and quacks in general, whose chief equipment consists of gross pretensions, commercial aggressiveness and the ubiquitious sign:

EYES EXAMINED FREE,

whereby the gullible and credulous are led to believe that they will receive something for nothing, it is small wonder, indeed, that the anticipated results of ocular treatment are so frequently unrealized and that the uninformed laity and indiscriminating physician often confuse the claims of the ophthalmologist with those of the pseudo-specialist.

It is gratifying to note, however, that during the past few years an increasing interest and broader knowledge has been exhibited by the medical profession in the diagnosis and rational treatment of eye-strain. Even in the conservative medical centers of Europe, as I recently learned in an extended tour of her hospitals, considerable importance is being attached to ocular defects in the production of neuro-gastric disorders, but there is plenty of room for improvement in this direction, both at home and abroad.

AN ANALYTIC STUDY OF UREMIA.

WITH SOME GENERAL CONCLUSIONS IN REGARD TO ITS CAUSES AND TREATMENT.*

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CRITIQUE OF CURRENT UREMIA THEORIES.

If the current belief that uremia is due to renal inadequacy and the retention in the blood and tissues of excrementitious urinary bodies were correct, then (1) complete anuria should always produce uremia, and (2) the blood of uremic patients should always show an increase and the urine a corresponding decrease of urinary substances.

Anuria Without Uremia.—Many cases of complete anuria, due to various causes, are, however, recorded, in some instances persisting for several weeks, in which none of the characteristic phenomena of uremia developed. Most of these patients for days complained of nothing more than a feeling of extreme lassitude, death resulting suddenly from heart failure without preceding coma or amaurosis, and without eclamptic spasms or typic changes of the blood pressure. On the other hand, uremia not infrequently occurs when the flow of urine is abundant and the excretion of urinary solids and water does not appreciably deviate from the normal.

Similar results are seen in animals after experimental nephrectomy or occlusion of both ureters. The animals die, but not uremic.

Uremia and Urinemia.—Death produced in animals by the injection of urine also produces a syndrome that differs materially from the uremic symptom complex. One must, therefore, distinguish clinically between uremia and urinemia. In uremia we often, but not invariably witness many of the signs of urinemia, but also many other signs besides. These other signs are the most constant and the most characteristic symptoms of uremia and the fact that they do not occur in urinemia forces one to the conclusion that they must be produced by other factors than simple urine poisoning. This view is borne out by a study of the solids of the blood and urine in uremia.

1. *The Nitrogenous Constituents.*—With the recent refinement of chemical technic these bodies (comprising chiefly urea, uric acid and its chemical congeners, the purin bases, ammonia salts, amido acids, creatin and others) have been diligently studied. The accumulated material is enormous, but disorderly. A careful sifting of the analytic data leads to a negation of the retention theory of uremia.

* This is a preliminary synopsis, full analytic data and clinical protocols will be published later.

For we see (1) as many cases of uremia develop without as with an abnormal accumulation of nitrogenous constituents in the blood; (2) we find uremia when the nitrogenous waste products of the blood are below the normal average, and (3) we inversely often fail to witness the appearance of uremia when the accumulation of these products in the blood is high above normal.

Similar conditions are determinable in the urine. Uremia may develop when (1) the patient is in nitrogen equilibrium (i. e., when the nitrogen output corresponds to the nitrogen intake) or (2) when the nitrogen output is far above normal, or (3) when the nitrogen output is below the normal average as compared to the intake; but it does not appear from a careful sifting of the analytic data published (including also some unpublished studies of my own) that uremia is more common when the nitrogen output is reduced below normal than when it is normal or even increased. Finally, many cases of true nitrogen retention are on record in which uremia failed to occur.

A quantitative study of the circulating and excrementitious urinary nitrogen bodies, therefore, teaches practically nothing of the causes of uremia. Only when we determine separately the various groups of nitrogen bodies that occur in the blood and the urine do we encounter certain deviations from the normal that may be considered fairly characteristic. I refer chiefly to two findings, viz.: (1) A relative increase of the ammonia salts, both of the blood and the urine as compared to normal average values, and as compared to the circulating and excrementitious urea. (2) A relative decrease of the urea both of the blood and urine as compared to average normal values and to the total nitrogen contained in circulating and excrementitious nitrogenous waste products.

These two findings I consider to be of the greatest importance, as I will have occasion to show.

It is well to bear in mind that there may be present in minute quantities among the nitrogen bodies of the blood and urine certain highly toxic albuminoid or alkaloid bodies that might produce an enormous effect without appreciably changing the nitrogen content of the blood and urine nor the relative proportion of the better known nitrogenous constituents to one another. This point also will be referred to again.

II. *The Inorganic Saline Constituents.* In the case of the salts of the blood and the urine our data are for the most part obtained from physical methods of examination, viz., cryoscopy and electric conductivity tests, determinations that are far more accurate than chemical methods of analysis. The electric conductivity in particular is a function of the salt content (molecular concentration) alone of the blood and urine and is altogether independent of the nitrogenous bodies that may be circulating at the same time; hence this latter method gives us especially valuable information in regard to the salt economy of the body in uremia. The slight inaccuracies inherent even in these physical methods are, I believe, overbalanced by the mass of figures collected in each case, for the technic when once properly acquired is so simple and rapid of execution that the operator is enabled to perform a great many determinations in the same patient within a short time.

The collected data show a marked degree of uniformity and indicate clearly two things: (1) That uremia often occurs when the salt values in the blood are normal or under normal; (2) that uremia need not occur even when the increase of salts in the blood and the corresponding decrease in the urine are very marked.

It appears, in other words, that increased molecular concentration of the blood is by no means a constant phenomenon in uremia. (This refutes Lindemann's seductive "physical" theory of uremia.) There is, in fact, less numerical evidence to show that uremia is due to salt retention than to the retention of nitrogenous waste products. One might argue again as in the case of the latter that certain salts were exquisitely toxic and were present in such minute quantities that they might poison the patient without appreciably altering the molecular concentration of the blood; this postulate can not be absolutely negatived by the evidence at hand; but if such salts play a commanding rôle in uremia (one might think for instance of cyanids) then they are not identical with any of the salts that normally appear in the urine, for none of the latter can exercise a pronounced toxic effect in quantities that would be so small as to escape detection by the chemical methods that are being employed to look for them.

This applies in particular to the potassium salts of the urine that have so often been accused of producing uremia. True, these salts are poisonous and they undoubtedly play an important part in urinemia (presumably causing death in this affliction by their action on the heart), but they can not be incriminated with causing the characteristic symptoms of uremia. Thus we are forced to the conclusion that neither the retention of the nitrogenous bodies nor of the salts that normally occur in the urine generally produces uremia. So much for the negative side of the argument.

The questions now arise: (1) What is the character and the origin of the poisons that can be accused of producing uremia? (2) What function or functions must become perverted; what organs (if not the kidneys) must become diseased in order that these poisons may be formed? For poisons there must be, as no one will gainsay.

THE CAUSES OF UREMIA.

It is well known that in uremia the urea secretion is often decreased; this fact is commonly interpreted to signify that the elimination of this body has become deficient, in other words, that it is being retained. If its elimination, however, were merely interfered with, it should always be correspondingly increased in the blood, and this is not the case.

I am inclined to the belief that the decreased urea secretion is not so much due to retention as to nonformation. This postulate is borne out by the finding referred to in a preceding paragraph, viz.: That with a decrease of the urea in the urine and blood, we very often find an increase of the ammonia. This points to the liver as the affected organ, for the bulk of the circulating ammonia is normally converted into urea in the liver.

There is other chemical evidence that points to the liver as the deranged organ. I refer, e. g., to the occasional increase of the purin base excretion relative to the uric acid excretion (the purin bases forming a precursor of uric acid that should normally be converted into the latter in the liver), and the increase of uric acid relative to urea (the former being a precursor of the latter, the conversion also occurring in the liver), the appearance of various amido-acid compounds, and compound glycuronates; of members of the acetone body group in uremia. The reduced tolerance for carbohydrates with alimentary glycosuria that I have noticed in several cases of chronic uremia also seems to point to some liver derangement.

All this chemical evidence that supports the idea of an hepatic instead of a renal origin of uremia is somewhat scanty; and our knowledge of the normal intermediary metabolism within the liver is at best still so deficient that we must approach the interpretation of its perversions with much trepidation. The clinical evidence, however, and what may be called the pathogenetic evidence in favor of the hepatic origin of many cases of uremia is in my judgment very strong and very convincing. For we know clinically that disturbances of the liver and of the kidneys often go hand in hand and I believe we would find this to be still more frequently the case if the liver were examined with the same degree of thoroughness as the kidneys in each case of nephritis or of Bright's disease that came to autopsy; and if mild, functional disorders of the liver were as easily recognizable as those produced by renal disorders of like severity.

That the liver, i. e., hepatic insufficiency, plays an important rôle in the pathogenesis of Bright's disease is acknowledged[1]; that, further, the same infectious or toxic agencies that produce nephritis also affect the liver in most cases is clear. For to the liver and t the kidneys jointly is relegated the rôle of ridding the organism of toxins, the former eliminating them into the bowel by the bile, the latter into the bladder by the urine. Toxins, moreover, of gastroenteric origin (and they constitute the most important of the exogenous poisons) must pass through the liver to reach the general circulation and the kidneys beyond. The same applies to poisons derived from metabolic perversions (endogenous poisons) for they are either for the most part generated in the liver or are carried to it before they reach the kidneys.

Assuming now for the sake of argument that the kidneys were always primarily affected in cases that ultimately determine towards uremia, so that their power of eliminating circulating toxins were diminished, then the bulk of the disintoxicating function would be thrown on the liver and in time hepatic insufficiency, i. e., overtaxation, fatigue of the liver cells, would develop. The character of the hepatic lesion would depend in each case on the virulence of the circulating toxins and the length of time during which they circulated.

There is still another idea that must be considered in this connection. It may be called the defective filter idea. It is a well-known fact that nephritic kidneys, while on the one hand less permeable than normal kidneys for a variety of circulating bodies, are on the other hand more permeable than normal for certain other bodies. In the case of the kidneys we are dealing with a living selective filter that is intended to hold back certain substances that are still useful to the organism and to allow the passage of other compounds that have outlived their usefulness, that possess no more potential energy, that are completely oxidized, dead, mere ash, and that should be gotten rid of as soon as possible.

When the kidneys are diseased, the filter leaks. Useful bodies that could still furnish a modicum of heat and energy are wasted. Among such bodies many are nitrogenous derivatives of albumin, as ammonia salts, amido acids, etc., bodies that should normally have been carried back to the liver for further elaboration to terminal products, like urea, uric acid, etc. When such suboxidized nitrogenous compounds are wasted, the body, we must assume, is forced to disintegrate more of albuminous pabulum in order to make up the deficit and the bulk of this additional labor is thrown on the liver. In time, this organ must consequently become fatigued, so that the further disintegration of albumins either proceeds more slowly than normal or becomes altogether perverted into abnormal channels.

When this happens less urea and more incompletely disassimilated intermediary products of albuminous metabolism are thrown into the circulation; or bodies are split off from the albumin molecules that are completely foreign to normal blood and that are poisonous. Substances of this character are actually found in the blood of uremic cases.

One may further say axiomatically that the less complete the disassimilation of the albumins the more do the generated products maintain an albuminoid character (ptoma peptones, peptotoxins), and the more intensely toxic do they become.

That the general metabolism of albumins in particular is perverted in uremia is further manifested by the frequent appearance of acidosis in terminal uremia and even in pre-uremic states; in fact, an acid intoxication must be incriminated with producing many of the fulminating signs of uremic, as well as of diabetic, coma. The increased excretion of ammonia that has been referred to may even be explained on the basis of a chronic acidosis, for we know that ammonia is thrown into the circulation whenever abnormal amounts of acids begin to circulate. This is a protective process, inasmuch as it aids in maintaining the normal alkalinity of the body fluids and the alkali content of the cells. The ammonia salts formed in this way are sacrificed at the cost of urea; hence more ammonia and less urea in the blood and urine of uremic cases. As urea is the most potent physiologic diuretic the flow of urine is at the same time often reduced.

This in rough outline is the pathogenesis of a self-intoxication, either acute or chronic, that may follow or accompany chronic renal disease, and still be due more to hepatic than to renal inadequacy. That the liver is not the only organ affected is probable, and uremia interpreted as above is not so much the result of hepatic derangement alone as of a general metabolic disturbance. This view is forcibly borne out by the observation of an occasional case of uremia, in which the kidneys are found practically normal after death, and in which essentially no evidence of renal disease or even of functional inadequacy on the part of the kidneys presented itself during the life of the patient.

The manifold factors that may precipitate an acute attack of uremia in an individual suffering from hepatic insufficiency (pre-uremia) need not be enumerated in detail; the determining insult may be severe as, for instance, some virulent infection or intoxication (chloroform anesthesia) suddenly throwing a mass of work on the liver or causing degeneration of its cells, or it may be apparently insignificant, and consist of nothing more than an attack of gastric or enteric indigestion or merely some psychic or emotional shock that acutely deranges the liver function.

How important it is, therefore, to be able to recognize early even mild degrees of hepatic insufficiency (particularly in renal cases and in pregnant women), and to safeguard the patient against all the agencies that might suddenly throw a strain on the fatigued liver!

1. Croftan: "The Circumstances and Treatment of Bright's Disease." THE JOURNAL A. M. A., June 24, 1905.

GENERAL PRINCIPLES GOVERNING THE TREATMENT OF UREMIA.

We are wont to treat uremia by stimulating the flow of urine, by purging and by sweating, with the intention of forcing the kidneys to resume their work, and of ridding the body of the urinary bodies that we imagine to be circulating in excess. In addition, we attempt to regulate the diet in such a way that there shall accumulate in the blood the smallest possible amount of residual nitrogenous bodies ("Harnschlacken"). If, now, uremia is not due to the circulation in excess of such bodies, the above therapy is wrongly directed.

It is questionable, moreover, whether any of the above measures can at best do more than rid the body of water, some sodium chlorid and possibly a little urea; the loss of water one might imagine to do more harm than good, for it should promote the concentration of the poisoned body fluids, and hence render them more toxic. There is surely no exact evidence to show that the sweat or the urine of uremic cases after the use of diaphoretics and diuretics becomes more toxic than before; nor has any one ever succeeded in demonstrating in such sweat or urine any of the albuminoid or alkaloid bodies that must be accused of causing the most fulminating symptoms of uremia.

The chief object of treatment should be to prevent the development of acute uremia by giving attention to those organs and functions that threaten to fail. In order to do this intelligently, *the renal idea should be relegated to the background*, and more attention should be bestowed in pre-uremic states on the liver and the general metabolism. The liver, above all, should have a rest. To stimulate the liver in chronic uremia is bad practice. The same principles should obtain here as in the treatment of a fatigued heart or a fatigued stomach or a fatigued nervous system.

First rest, then graduated exercise until the normal tone is regained. Stimulation should be reserved for emergencies and as a last resort. To accomplish this end all articles should at first be eliminated from the diet that can irritate the liver or stimulate it to increased functional activity; every effort should be made to reduce intestinal putrefaction to a minimum, for intestinal toxins as they reach the liver severely strain the disintoxicating function of the organ. No cholagogues should be administered.

After a period of rest—and starvation for a few days seems a rational plan—the liver may be gently stimulated in the hope that it may be coaxed gradually to resume its functions. This should be attempted by the carefully graded administration of salicylates, of bile acids, possibly of calomel; in addition, various dietetic and physical means may be adopted that we know to be capable of stimulating the various functions of the liver. All this treatment should be carried on with careful supervision and daily control of the effect of these measures on the functional activities of the liver as evidenced by the composition of the stools and the urine and the general condition of the patient. The details of the various means mentioned and of the symptomatic evidences of the state of the liver function can not be discussed within the narrow frame of this article. I content myself with establishing general principles.

The treatment of the acute uremic attack is always an ungrateful task; for it is immaterial whether we are dealing with a disorder that is primarily or in its ultimate consequences due to renal or hepatic or general metabolic insufficiency, in any case we are dealing with a terminal syndrome, that is due to the crumbling of the whole cellular edifice. To arrest this collapse, essentially means to revive a dying organism. That this may occasionally be done for the time being can not be denied; and as the recuperative powers of the human body border on the phenomenal no effort should be spared to bring an acutely uremic patient back to life.

Of sweating, purging and the stimulation of the kidneys I have already spoken. The administration of liver stimulants by mouth seems hardly feasible, and I have never seen any good effects in uremia that I could fairly attribute to this practice. The most sensible procedure is blood-letting. This useful measure constitutes a lost art nowadays, and it is time that it should be revived; we are dealing in uremia with a toxemia (for no organic lesions that could explain uremia are discovered after death), and to eliminate some of the poisons that are present in the blood by bleeding is always indicated; whether the injection of a saline to replace the lost fluid is useful or necessary is not yet established; it can certainly do no harm, particularly if some saline is injected that can stimulate the hepatic function, e. g., salicylate of soda in normal salt, or a solution of sodium citrate or phosphate in appropriate molecular concentration. Symptomatically, the use of such infusions has been useful in my hands, and has occasionally caused the most alarming symptoms of an uremic attack to disappear when other measures, I think, would have failed.

100 State Street.

A CASE OF TRAUMATIC ANEURISM OF THE RIGHT RENAL ARTERY, WITH A REVIEW OF THE LITERATURE.

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PHILADELPHIA.

Because of its rarity and the few cases that have been successfully operated on, I report this case of traumatic aneurism of the right renal artery that occurred during my service as house surgeon at the German Hospital. This patient was operated on by Dr. John B. Deaver, with whose permission I present the report:

History.—J. D., male, aged 26, single, machinist, was admitted to the surgical wards of the German Hospital March 17, 1905. There is no hemophiliac, tubercular, neoplastic, cardiac or nephritic history in the family. The man smokes constantly and has used alcoholic beverages freely until lately. He denies venereal history. His appetite has been variable; bowels have usually been regular.

Present Illness.—When 12 years of age he was thrown from a horse and landed heavily on the ground, the brunt of the blow being received in the right lumbar region. The patient went to bed on account of shock, and complained of sharp, cutting pain in the right lumbar region, followed by hematuria. There was no vomiting. After being confined to bed for about twenty-four hours, the patient got up and went about his business. About a month after the accident he was seized again with a sharp, cutting pain in the right lumbar region, which lasted about two hours. He has had similar attacks of pain, usually with intervals of five days; often six months would elapse without any symptoms whatsoever. Each attack was severer than its predecessor.

The patient has never vomited, except after a hypodermatically injected dose of morphin; has never passed a calculus; he has never had a chill during an attack; he has never had a protracted cough, nor has he noticed any loss of weight. He was never jaundiced and never passed a gallstone.

The present attack began suddenly four days before admission to the hospital, with a colicky pain in the right lumbar region, which was referred down along the course of the right ureter to the end of the penis. Two days before admission he passed a moderate amount of blood through the urethra. This is the third attack in which blood was so passed.

Examination.—The patient was found to be of medium size and well nourished. Careful examination of the body revealed no pathologic condition, except that in the right lumbar region, where there was a moderate degree of bulging of the walls of the iliocostal space, together with tenderness and pain rigidity.

There was a fixed tumor laterally between the ninth rib above and the iliac crest below, posteriorly reaching the right erector spinæ muscle, and anteriorly extending to a point 3 cm. external to the right linea semilunaris. Dullness was obtained over this area. The tumor was apparently cystic. No thrill or expansile pulsation could be felt, nor could a bruit be heard. The area of liver dullness showed a displacement of the liver upward for about 4 cm.

Blood Examination: Hemoglobin, 60 per cent.; red blood cells, 2,790,000; white blood cells, 11,700; color index, 1.0.

Urine Examination: Total amount in twenty-four hours, 620 c.c.; color, dark brownish-red; reaction, acid; sp. gr., 1029; albumin, trace; glucose absent; urea, 2 per cent. Microscopically, abundant red blood cells, epithelial cells, phosphates and leucocytes were seen. No tubercle bacilli were found.

Diagnosis.—The history of a fall from a horse, landing on the right side, followed by pain in the right lumbar region and by hematuria, with moderate disability, suggested trauma of the kidney. The subsequent history of periodical attacks of pain, several of which were accompanied by hematuria, and the presence of a yielding tumor led us to suspect a hematonephrosis.

No signs were elicited that would reveal the presence of an aneurism. The duration of the condition, fourteen years, taken in conjunction with the negative family history, the absence of metastases or of cachexia, and the very moderate constitutional disturbances, led us to exclude malignancy, the secondary anemia present being accounted for sufficiently by the latest hemorrhage. Hydronephrosis was also excluded. So, too, the history and findings of the case made the presence of a renal calculus an improbability.

Operation.—The patient was etherized and the operation performed by Dr. Deaver on March 18, 1905.

An oblique incision 10 cm. in length was made in the right iliocostal space, and the perirenal fat exposed. The right kidney was palpated and found to be enlarged sufficiently to warrant an extension of the incision anteriorly about 7.5 cm., carefully avoiding the peritoneum. While attempting to deliver the kidney, its lower pole ruptured, allowing about 200 c.c. of partly clotted blood to escape. The ureter was clamped and ligated. The kidney was delivered by successively clamping and cutting the adhesions surrounding it. The renal artery was palpated and found to be 1.5 cm. in diameter and the site of a tubulated aneurism. It was clamped close to the aorta and opened distal to the clamp, permitting the escape of fresh blood. The renal vein also was clamped. In freeing the upper pole of the kidney it was found necessary to go as high up as the ninth rib. The kidney was removed, but that part of the renal artery between the clamp and the pelvis of the kidney was left in place. Oozing from the bed of the kidney was controlled by a piece of iodoform gauze; four clamps were left in, the handles projecting through the incision, which was closed in the usual manner.

Postoperative History.—The patient was on the operating table forty-five minutes, and when removed to bed the temperature was 99.6, the pulse 128, and the respirations 28. There was no sign of shock.

The clamps that were left in the wound for forcipressure were removed on the fifth, the gauze on the sixth, and the stitches on the ninth day after operation.

The patient had an uneventful recovery, with the exception of a mild delirium on the fourth, fifth and sixth days after operation, and was discharged, cured and in excellent condition, on May 2, 1905, forty-five days after operation.

Of interest in determining the permeability of the left kidney after operation by gauging its intensity of elimination is the appended urinary table for the two weeks following operation:

POSTOPERATIVE URINARY FINDINGS.

Date. 1905.	Amount in 24 hr.; c.c.	Sp. Gr.	Color.	Albumin.	Urea; per cent.	Microscopic Findings.	
Mar. 17	1629	029	Dark brown....	Trace....	2	Numerous red blood cells.	
" 18	700	1032	Reddish brown..	Trace....	..	No tubercle bacilli.	
" 19	1100	1025	Yellow.....	Absent...	..	Phosphates, urates.	
" 20	950	1028	Amber.....	Faint trace.	..	Phosphates, uric acid.	
" 21	875	1028	Yellow.....	Very faint trace.	2.7	Phosphates, urates.	
" 22	630	1034	Reddish yellow.	Absent...	2.2	"	"
" 23	829	..	Cloudy yellow.	Trace....	2.2	"	"
" 24	750	1030	Yellow.....	Very faint trace.	3.	"	"
" 25	400*	1032	Yellow.....	Absent..	3.3	"	"
" 27	1890	1013	Yellow amber..	Absent...	1.2	"	"
" 28	1400	1011	Pale yellow...	Faint trace.	1.7	"	"
" 29	1310	1012	Pale yellow...	Faint trace.		"	"
" 30	1290	1014	Yellow....	Faint trace.	1.2	"	"
" 31	800	1026	Yellow amber..	Very faint trace.	1.8	"	"
April 1	700	1021	Yellow.....	Faint trace.	1.9	"	"

* Plus.

N. B.—Glucose always absent. Reaction invariably acid.

Examination of Kidney.—The kidney was examined by Dr. A. O. J. Kelly, who kindly furnished the following report:

The kidney, when removed, was fragmented and partly disorganized, and measured 11x6x4 cm. The lower two-thirds were surrounded by, and lay flattened against, the sac of a false aneurism. The kidney tissue in this region consisted almost exclusively of cortex, and varied in thickness from 4 to 8 mm., but was very much attenuated at the extreme lower pole, where rupture had occurred. The tissue was much compressed, and immediately adjacent to the blood clot it was quite fibroid. The cortex of the kidney elsewhere than immediately surrounding the false aneurism contained a few small cysts. The renal artery, having been cut off close to the kidney, could not be further studied.

Microscopically, areas of chronic parenchymatous nephritis, with moderate fibrosis and round-cell infiltration, were found.

By consulting the literature, I find that in all twenty-two cases of aneurism of the renal arteries have been detailed by other writers. Keen[1] described a nephrectomy for a large aneurism of the right renal artery, and gave a résumé of twelve previously reported cases of renal aneurism.

Morris[2] described a case of aneurism of the left renal artery, and gave abstracts of twenty-one previously reported cases.

P. Ziegler[3] gave a general résumé of the subject of renal aneurisms, together with abstracts of twenty cases which he had collected.

Through the kindness of the librarian in the surgeon-general's office, Major-Surgeon Walter H. McCan, I have collected four more cases, and these, together with the case here reported, bring the recorded cases up to twenty-seven. This is the fifth patient who has been operated on; of the other four, one died.

Ziegler[3] has described the etiology, symptomatology, diagnosis, prognosis and treatment of renal aneurisms

1. Keen: Philadelphia Med. Jour., 1900, vol. v, p. 1038.
2. Morris: Lancet, 1900, vol. ii, p. 1002.
3. Ziegler: Centralb., f. d. Grenzgeb. d. Med. u. Chir., Jena, 1903, vol. vi, pp. 2-8

so well that I would deem this article incomplete should I not quote him:

"Of aneurisms, those of the renal arteries are among the rarest, and . . . are rarer than splenic aneurisms. Their aneurism is small, it may possibly give no symptoms and perhaps will only be relieved accidentally during the course of an operation. Later it may produce a tumor and bring about atrophy of the kidney, finally rupturing into the renal space, accompanied by severe hemorrhage, causing death, or not progressing so rapidly, a sac is formed at the false aneurism, in which repeated small hemorrhages lodge.

"The bleeding can become fatal before a tumor has made its appearance. . . . Sooner or later a tumor will always form, and this is, besides the hemorrhage, the most serious symptom. The tumor may give rise to no pain or may be accompanied by most excruciating pains; the size of the tumor may vary from that of a fist to a man's head. . . . Pulsation is absent in renal aneurisms, since the artery is too small in proportion to the size of the sac for the impulse of the blood to be great enough to expand the sac sufficiently that it may be made manifest; so, too, auscultation rarely gives results. The ordinary symptoms that arise from the escape of blood or from the pressure of the tumor are very unreliable; mistakes are very readily made with neoplasms, hydronephrosis and hemato-nephrosis. In neoplasms, rapid growth, followed by emaciation and mild bleeding, are characteristic, and, in the presence of metastases, the diagnosis is clearer. In hydronephrosis, which also can be of traumatic origin, bleeding is seldom met with.

"The prognosis is extremely unfavorable. All cases in which no operation was done terminated fatally, and of these the cause of death was hemorrhage into the renal space, venter or retroperitoneal space.

"As to treatment, nephrectomy alone is to be considered, and, by all means, the transperitoneal method is to be preferred on account of the ease with which the renal vessels may be quickly ligated."

Ziegler then gives abstracts of twenty cases which had been reported up to January, 1903.

I have collected the following four cases:

1. Fulton[4] writes of a woman, aged 36, with a history of severe pain in the right side with more or less collapse a day or two before admission to the Rhode Island Hospital. The diagnosis of extrauterine pregnancy was considered the most probable one, but the patient was not operated on because of her extreme condition, and she died shortly afterward. There was found at autopsy an enormous hemorrhage, retroperitoneally, on the right side, extending from the diaphragm to the brim of the pelvis. The kidney lay in the midst of this mass of blood clot. About one inch from the origin of the renal artery, there was an aneurismal dilatation of that vessel; this had ruptured, causing the hemorrhage.

2. Abbott[5] reports on a specimen showing a small saccular aneurism on an accessory branch of the right renal artery. The history, in brief, is that of a woman, aged 56, who two years previously fell heavily, injuring her back, and who had never felt well since. Eighteen months later the patient sustained another heavy fall. A year ago she began to suffer from the renal insufficiency, which caused her death. Postmortem examination revealed a general anasarca and advanced chronic interstitial nephritis. The renal arteries were distinctly calcareous; the other arteries showed beginning atheroma. The right kidney showed four cicatrices, and, microscopically, advanced chronic interstitial nephritis, with marked periglomerulitis and atrophy of the tubules. In the medulla were hemorrhagic areas.

Of interest in this case is the association of three possible causative factors: a heavy fall, in which the patient injured her back; a chronic interstitial nephritis, and marked calcareous degeneration of the renal arteries. The specimen, described by Abbott, shows a small aneurism on an accessory branch of the right renal artery, just beyond its origin, which presents a small excrescence, the size of a marrow-fat pea, on the posterior surface of the vessel. The contents of the sac were a single free, homogeneous blood clot. At the proximal end of the sac there was beginning fatty degeneration. There were no symptoms of aneurism of the renal artery present.

3. Barnard[6] reports a very interesting case of a small calcified and cured aneurism of the right renal artery that caused the death of the patient in a peculiar manner. A boy, aged 9, was thrown from a runaway horse, falling heavily to the ground on his back and right side. On account of signs of hemorrhage into the venter, he was operated on the next day, and about 750 c.c. of black fluid blood were removed from the peritoneum, and a rent in the right lobe of the liver was found and packed. Death occurred the following day.

The postmortem examination revealed an aneurism, the size of a hazel nut on the upper of two branches of the right renal artery, the contents of which had partially calcified and had thus brought about a cure. The heart revealed a stenosis of the mitral valve, an embolus from which probably caused the aneurism.

Of further interest in this case are the facts not only that the aneurism and renal artery escaped uninjured, but also that the aneurism conducted the violence from the loin to the duodenum and liver, bruising the duodenum, and causing a stellate fracture of the liver that radiated from the renal impression, and a wedge-shaped area of pulping of the hepatic tissue, the apex of the wedge corresponding with the calcified aneurism. The base of the wedge appeared on the surface of the liver and allowed the free escape of blood into the peritoneum.

The kidney itself had escaped injury, but between the true and the fatty capsule of the right kidney, on its posterior surface, was a considerable hematoma, and this extended around the posterior surface of the aneurism.

4. Barnard[6] cites the case of a little girl, whom he examined. The child was dying of malignant endocarditis and developed suddenly a large, diffuse swelling in the left loin behind the colon. At necropsy, this was shown to be a large collection of blood which had escaped from a ruptured aneurism of the left renal artery.

I emphasize Morris'[2] valuable warning that as soon as the nature of the tumor is ascertained, the renal pedicle should be reached, and the renal artery ligated before attempting to empty or to remove the sac. The wisdom of this dictum is self-evident. The text-books do not mention aneurisms of the renal arteries, an error of omission that, I believe, should be corrected.

In cases in which a fall from a height with evidences of resultant injury to a kidney has occurred, and in which there is hemorrhage, it would be well to consider the diagnosis of aneurism of the renal artery, which is a diagnosis more definite than that of essential kidney hemorrhage.

In closing, I call attention to the fact, more of interest than of practical importance, that of all the arteries of the body the renal, when the site of a symptom-producing aneurism not involving the abdominal aorta, is one of the few that offers an ideal cure—total extirpation of the artery (and kidney) without interfering with the blood supply of any other part of the body.

4. Fulton: Providence Med. Jour., 1904, vol. v, p. 9.
5. Abbott: Philadelphia Med. Jour., 1900, vi, p. 959.
6. Barnard: Jour. Path. Soc. Lond., 1900-1901, vol. iii, p. 254.

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SUPERSTITIONS IN MEDICINE.

Superstition is a rather illusive word to define, and yet if we go back to its etymologic derivation from the Latin it is not difficult to understand. It comes from the Latin word *superstes*—a survivor. Superstitions then are survivals from a previous set of beliefs or opinions in any department of thinking which still continue to have their influence over men's actions though they have lost their basis or supposed basis in truth because of the evolution of the department of thought in which they occur. In the old days when many phenomena that are now readily explicable on natural grounds were incapable of explanation, theories were invented, such as those of ghosts and witches, and these were supposed to afford the desired reasons for things which the human mind is always so prone to seek. Most of these beliefs have disappeared in the progress of modern science and of education, yet there are some people who still continue to be ruled or at least influenced by the survival of the old theories, that is, by superstitions.

It is almost needless to say that there are not a few superstitions left in medicine; we mean even in scientific medicine. Popular medicine is full to overflowing with them. There are plenty of reasonably intelligent people, including many lawyers and ministers of the Gospel, in this country who still wear plain iron rings on their fingers, confident that somehow the electricity which they have been told flows from this into their systems prevents the occurrence of rheumatic and nervous pains of many kinds. Faithfully every second or third day they rub out the interior of the ring when it has become rusted because of perspiration and congratulate themselves on the fact that they are wearing it because here is the actual evidence on the inside of the ring that it is drawing various forms of insalutary material out of their systems.

This principle that something can be put on the outside of the body which will draw out evils from within has never lost its hold on the popular imagination, and indeed there are many physicians who apparently still cling to it. The poultice is still used by a great many practitioners of medicine with at least the subconscious idea that it will help to bring noxious material to the surface. A poultice, according to our modern medical scientific principles, is nothing more than a method of applying moist heat to the body. It does not matter then in the slightest degree what the poultice is composed of, provided only that it is able to retain heat and moisture well for a reasonable period. There are many who still consider that the selection of the material of which the poultice shall be made for various diseases is extremely important. A linseed meal poultice is used in pneumonia, an Indian meal poultice is preferred in peritonitis, while there are some who consider that for erysipelas and for red and swollen joints a cranberry poultice is more effective than any other. These opinions are, of course, medical superstitions, survivals of the time when the drawing power of the poultice was considered to be its main reason for use.

There are superstitions, however, in departments of medicine that have been much more successfully studied. Notwithstanding the fact that it is now generally recognized that typhoid fever is a generalized infectious disease with a local manifestation, usually though by no means always or necessarily in the intestine, there are still many who believe that the medication for typhoid fever should always be directed to the administration of antiseptics which will hamper the growth of the typhoid bacilli in the intestinal ulcers. Even if these were killed there are always other typhoid bacilli in the system and the disease will run its course. Besides it seems to be forgotten that bacteria of all kinds are cellular organisms and that the body is composed of cells. Bacteria have learned to live alone and are hardy cells. The cells of the body, with their habit of dependence and living in colonies, are much less vital. As a consequence it would seem to be almost a certainty that any substance which would kill bacteria within the body would work serious ravages among all the body cells with which it came in contact. Of course it is possible that some substance might be obtained with a specific action against the bacteria and harmless for body cells. Such has actually been found for the micro-organism which causes malaria, but that is the only case on record, and the search for specifics has been one of the most unsatisfactory departments of investigation in medicine.

It is generally acknowledged at the present moment that acute articular rheumatism is due to a specific micro-organism, though it is not yet definitely decided just what that micro-organism is. In spite of the consensus of opinion in this matter, however, medical discussions still continue to be liberally interlarded with the most curious survivals of the older theory of the metabolic origin of rheumatism, superstitions for which there is no longer any basis in medical theory or knowledge. Physicians still talk of the rheumatic diathesis just as if there was a definite tendency to the occurrence of this disease somehow engendered in the tissues before infection. It is true that rheumatism once suffered from is likely to recur, but the same is true of pneumonia. We do not for that reason talk of a pneumonia diathesis. The question of heredity in rheumatism is still considered important by many, though how there can be heredity that affects the taking of an acute infectious disease is hard to understand.

In the minds of many physicians this same question of heredity still maintains much of the importance that it was formerly supposed to hold in pulmonary tuberculosis, though now the infectious nature of the disease, and even its contagiousness, is universally recognized. In the old days, at the beginning of the nineteenth century, before the various infectious fevers of childhood were separated from one another and clearly defined, morbid constitutional tendencies to these diseases were supposed to exist and hereditary elements were supposed to enter into the causation of them. These older superstitions have disappeared, but we have more modern survivals of antiquated theories to take their place. Apparently it would be well occasionally to make a review of the opinions we hold, in order to see how many of them are based on up-to-date knowledge and how many are hold-overs from a previous state of knowledge no longer justified by present medical conditions and progress.

METASTASIS OF BENIGN TUMORS.

At the annual meeting of the German Pathologic Society at Kassel in 1903 Borrmann of Göttingen reported a most interesting case of atypical tumor formation. It concerned a young woman who had suffered for three years from a hard, dark-red tumor, which recurred repeatedly after its removal, in all six times. Death resulted from extensive metastases in the lungs, in addition to which a nodule was found in the gluteal region, as well as existing recurrences in the scar. The remarkable reature of the tumor was, however, that in spite of this extensive metastasis and persistent recurrence in the primary site, the histologic structure was that of a typical benign growth. Borrmann could find not the slightest feature of malignancy in the growth, and characterized it as a simple hemangioma. All the recurrent growths and metastases presented the same appearances of masses of new-formed blood vessels, composed of mature cells, with perfect endothelial linings, which were often proliferated into the lumen of large vessels in a papilloma-like formation.

This case brings up a question of great interest and importance to the surgeon as well as to the pathologist—can benign tumors produce metastases? There occur in the literature a number of instances in which apparently typical chondromas, chiefly the large irregular growths of the pelvic bones, have grown into blood vessels and produced secondary growths in remote places, particularly in the lungs. These tumors have been structurally the same as the ordinary benign chondromas. Besides the chondromas the chief instances of apparent metastases of benign tumors have arisen from what appeared to be benign tumors of the thyroid. There are now in the literature reports of some twenty or more cases of this kind. These metastases have been found particularly in the bones, and as a rule the bone tumor has been removed at operation under the natural assumption that it was the primary growth. Not infrequently the secondary growths have been multiple, and occasionally the viscera, particularly the lungs, have been involved. The thyroid in these cases has shown either a simple diffuse goiter, or, more commonly, a small nodule of apparently benign adenomatous tissue; in any event, there has never been any growth in the thyroid that would even be considered as malignant, either from its gross or microscopic appearances, were it not for the suspicious coexistence of metastases. The secondary growths also have usually reproduced either the structure of simple adenoma or of typical normal thyroid tissue, so that some have been reported as instances of metastasis of normal thyroid tissue without a primary tumor. Beyond these two forms of growths there are practically no instances known of metastasis of non-malignant tissue; a few examples of secondary growths from benign gliomas, myomas and liver adenomas have been described, but they are for the most part doubtful.

We may interpret these observations in either of two ways. With v. Hansemann we may consider that the mere fact that metastasis has occurred is proof positive of the malignancy of a growth and characterize them, as Orth did Borrmann's case, as "metastasis formation by an otherwise benign tumor." In support of this is the fact that a number of these cases have resulted fatally from the effects of the secondary growths, as happened with the classical case of Oderfeld and Steinhaus.[1] On the other hand, we must consider the suggestive fact that the chief examples of the condition under consideration occur from tissues whose capacity for transplantation is perhaps greater than that of any other tissues in the body. If pieces of normal cartilage are implanted into animals, even of a foreign species, they will remain alive for a great length of time, and if injected into vessels they may live and grow slightly in the organs in which they lodge. When very young embryos have been injected or implanted into animals for the purpose of studying tumor theories, it has been found that the cartilage is the chief tissue that survives and practically the only one that grows. Likewise, of all the parenchymatous organs, the thyroid shows the greatest vitality when transplanted. Even the law of specificity of cells seems to fail here, for sheep thyroids have been successfully implanted into the human body, maintaining their vitality for some time. It seems to us that these facts are more than mere coincidences, and that it is quite possible that fragments of thyroid tissue or of chondroma tissue, when dislodged and taken into the blood vessels in the form of cells from a benign tumor, might continue to grow where they lodged, producing a true metastasis, without any other feature of malignancy. Such a growth could be properly designated only as a metastasis of benign tissue, and should be considered as an exception to the otherwise invariable rule that "metastasis means malignancy."

1. Centralblatt f. Pathol., 1903, xiv, p. 84.

THE PUBLIC HEALTH SERVICE AS A CAREER.

Dr. Wesbrook's interesting presidential address before the American Public Health Association[1] brings up once more a question which every intelligent physician should ask himself in all seriousness and contriteness of spirit: What can be done by the medical profession to strengthen the quality of public health work? Amelioration and palliation may take many forms, but the real problem often narrows down to a consideration of ways and means of obtaining trained and efficient service.

In Great Britain, as is known, a diploma in Public Health is required of candidates for the position of health officer. For this diploma special regulations have been laid down by the general medical council of Great Britain, which are designed to insure "a position of distinctly high proficiency, scientific and practical, in all the branches of study which concern public health." In other words, special qualification, involving both laboratory training and outdoor sanitary work, are demanded of those who wish to enter this important field.

The sanitary organization and administration of many German, French and English cities in certain features are so far in advance of much current American practice as to make the latter seem bungling and wasteful by comparison. It is not that improvement has not been made. The pessimistically inclined should be referred for encouragement to the condition of the New York Health Department in 1864 as set forth in Andrew D. White's recently published autobiography. The "health officers" and "health inspectors" of forty years ago were men who owned great blocks of tenement houses, in which they "kept low drinking bars." While a unit in ignorance and neglect of their duty, they were shown in the course of a legislative inquiry to be at variance in respect to the importance of "highjinnicks" (hygienics), a term that was introduced as meaning "persons who doctor themselves," and afterward interpreted by others as "bad smells that arise from standing water," or more commonly as a disease that was "quite serious" or "pretty bad" in the inspector's district, although one witness thought there was "not much of it." It is at least a satisfaction to believe that the return of Boole and his assistant inspectors is as remote as the return of the dodo.

At the same time, it is hardly to the point to urge that things have been or might be worse; our contention should be that they can easily be better. Are the best-educated and most influential men in the medical profession really throwing all their weight in support of modern and enlightened sanitary organization, or are they inclined to regard interest in municipal health affairs as unwise and as trenching on "politics"—to use a good word that Americans have helped to bring into disrepute? There are in this country hundreds of devoted and capable men engaged in the work of safeguarding the public health who must feel at times isolated and apart from the great body of the medical profession. We should ask ourselves if this could be the case if the profession presented a united front to the onslaughts of all the varied interests that stand for revenue only in the modern city. There can be no question as to the impression that would be made on the community if the leading physicians stood solidly together and showed an active interest in developing and sustaining an efficient system of municipal hygiene. We have lately seen the speedy "volte-face" executed by an incredulous and jeering press as a result of the support given by physicians to the doctrine of mosquito transmission of yellow fever.

It is partly, possibly largely, because public health work has been regarded sometimes as an avocation that any physician can "pick up," and sometimes as an occupation only remotely concerning the practicing physician, that it has not yet afforded the opportunities for a career that are offered by other specialties. Native aptitude and proper training are essential to a successful career in the public health service; so are the appreciation and co-operation of those members of the community whose attainments best fit them to judge of the methods and fruits of the work of health officials.

1. THE JOURNAL, Dec. 16, 1905.

OBLITERATING ENDOPHLEBITIS OF THE HEPATIC VEINS.

Some five or six years ago Chiari, of Prague, at a meeting of the German Pathological Society, called attention to a condition which clinically resembles cirrhosis of the liver, but which is due to an obliterating endophlebitis of the hepatic veins. The lesion had been described as early as 1846 by Budd in his well-known work on diseases of the liver, but, like many other rare conditions, it had been almost forgotten till Chiari again called attention to it. In the routine autopsy technic as usually practiced, the condition of the orifices of the hepatic veins, as a rule, is not investigated, and the experience of Chiari, who has observed seven cases of this condition in a few years, suggests that a great many must have been overlooked, probably because there is a definite cirrhosis of the liver in most cases, and this has been taken for the primary lesion.

The reported cases of obliterating endophlebitis of the hepatic veins have been recently collected by Hess,[1] who has made a careful study of them. So far not a single case has been recognized in the United States, though such cases must have occurred from time to time. The clinical picture of the disease resembles very closely that of ordinary cirrhosis of the liver. Males and females are about equally affected, and, in contradistinction to ordinary cirrhosis, the disease usually occurs in young adults. The onset of the symptoms is gradual, and most cases run a chronic course, though in rare cases the disease lasts only a few weeks. The first symptom is

1. Amer. Jour. Med. Sci., 1905, vol. cxxx, p. 986.

often abdominal pain, and this may be severe, but is more usually mild, at any rate at first. In some cases the swelling of the abdomen is the first symptom which calls attention to the condition. Gastric symptoms may be prominent, as in cirrhosis, but in many of the recorded cases they are not noted. Ascites, distended abdominal veins, and enlarged spleen are fairly constant. Edema is a late symptom, and slight jaundice is not infrequently noted. The liver is usually enlarged, so that the cases resemble hypertrophic rather than atrophic cirrhosis. The usual length of time between the appearance of symptoms and death is about six months. In very rare instances, as in the case reported by Leichtenstern, death occurred in less than two weeks, with very acute gastrointestinal symptoms.

The etiology of this affection is obscure, and almost every one who has recorded cases has a different explanation. Chiari suggested a syphilitic inflammation of the veins, but on rather slender grounds, at any rate in some cases. In many of the other reported cases there is no suspicion of syphilis, and it seems quite certain that this disease can not be an invariable factor. Other causes mentioned are trauma, congenital malformation, perihepatitis, hepatitis, and thrombosis.

The differential diagnosis between this condition and ordinary cirrhosis must be very difficult, if not in many cases impossible. According to Hess, a positive diagnosis has never been made *intra vitam*. When we consider that the effect of damming back of the blood in the hepatic veins is, in the end, the same as that of portal obstruction, this is not to be wondered at. The condition, however, is one that should be thought of more frequently than it is at present. In a case resembling ordinary cirrhosis, but occurring in a young individual in whom the ordinary causes of cirrhosis are lacking, we should certainly be suspicious. The occurrence of pain over the hepatic area, which is rare in cirrhosis, should also make us hesitate before making the latter diagnosis. The rapidity of onset of the ascites and the rapid reaccumulation of ascitic fluid after tapping are suggestive of complete obstruction rather than the partial obstruction of cirrhosis, though not by any means pathognomonic. Taking all these points into consideration, it seems certain that from time to time we shall meet with cases in which we must seriously suspect endophlebitis of the hepatic veins, even if we can not positively diagnose it. It seems probable that the condition will become much more common as it becomes more widely known.

THE DEATH ROLL OF 1905.

In the Necrology Department of THE JOURNAL 2,045 deaths of physicians in the United States and Canada were recorded during 1905. On an estimated medical population of 125,000, the death rate for the year is 16.36 per 1,000—no material change from previous years, as in 1902 the estimated mortality rate per 1,000 was 14.74; in 1903, 13.73, and in 1904, 17.14. The age at death varied from 23 to 104 years, the average being 61; the number of years of practice varied from 0 to 75, the average length being 31 years and 1 month. Below we go more into detail on these and other points for the benefit of those interested.

The chief difficulty still met with is the incompleteness of the obtainable data regarding deaths. In the death notices of the year, no explicit cause of death was given in 706 instances, or 34.52 per cent.; the number of years of practice was omitted in 105 cases, or 5.14 per cent., and no information regarding age was obtainable in 284 cases, or 13.88 per cent., and this in spite of correspondence in hundreds of cases.

Of the decedents, 167 were members of the American Medical Association, and of these 7 had held official positions in the organization; 170 were chronicled as being members of the various state medical societies; 35 as members of district societies; 175 as members of county societies; 32 as members of local societies; 5 had been delegates to the international medical congresses, and 2 were members of the British Medical Association.

The military records for the dead of last year disclose the fact that 184 had served their country for the north and 70 for the south in the Civil War; 11 were veterans of the Mexican War; 2 had seen service in Indian campaigns; 12 in the Spanish-American War, and 10 had participated in foreign wars. Of present and past officers of the Medical Department of the Army, 35 died during the year; of naval officers, 21, and 2 officers of the U. S. P. H. & M.-H. Service. The national guard lost 16 medical officers, 3 of whom had attained the rank of surgeon-general and 2 that of assistant surgeon-general.

Among civil positions of honor held by the dead here noted were the following: Congressmen, 3; state senators, 15; members of legislature, 53; U. S. consuls, 3; judges and court officials, 15; mayors, 34; councilmen, 22; postmasters, 12; county treasurers, 7; coroners, 33, and revenue collectors, 7.

Many of the deceased were prominent in educational matters: 4 had served as members of boards of regents of state universities; 22 as superintendents of schools or members of school boards; 64 as professors, lecturers or instructors in medical colleges, and 28 as members of state boards of health and medical examination and registration.

Among the medical positions held were 101 as health officers or members of health boards, 22 as county physicians, and 26 as superintendents of state or general hospitals. Nine of the deceased were editors of medical journals.

As before, "heart disease" heads the list of deaths causes. To this are assigned 202 deaths, 15 of which were from angina pectoris, 4 from endocarditis and 2 from myocarditis. Cerebral hemorrhage, which includes most of the deaths ascribed to "paralysis" and

"apoplexy," caused 153 deaths; pneumonia, 141; tuberculosis, 102, of which 4 were peritoneal, 2 laryngeal, 2 of bones, 1 renal, and 1 intestinal; nephritis, including Bright's disease and dropsy, 100; senile debility, 80; accidents, 72, of which 11 were due to morphin poisoning, 10 to drowning, 9 to railway accidents, 7 to falls, 5 to fractures of hip in the aged, 4 each to gunshot wounds and street railway casualties, and 3 each to burns, carbolic acid poisoning and runaways (poison alone caused 19 of the 72 deaths); after surgical operations, 53; suicide, 46, including 26 by gunshot wounds, 7 by morphin, 4 by carbolic acid, 4 by exsanguination, and 3 by strangulation; typhoid fever, 41; malignant disease, 34; septicemia, 28; appendicitis, 27; paralysis, 25; influenza, 24; uremia, 122; homicide, 20, including 13 by gunshot wounds, of whom 1 was killed while resisting an officer, 4 were killed in duels and 1 medical officer was killed in battle in the Philippines; meningitis, 16; liver diseases, 15; diabetes, 13; gastritis, 10; peritonitis, paresis and gall-bladder disease, each, 8; locomotor ataxia and hemorrhage of the lungs, each, 7; malaria, intestinal disease and insanity, each, 6; yellow fever, neurasthenia, erysipelas, brain disease and alcoholism, each, 5; pernicious anemia, 4; and hematemesis, scarlet fever, smallpox, exposure, and diphtheria, each, 3. Of the total deaths, 138 were chargeable to violence; 72 were due to accident, 21 less than in 1904, 1 more than in 1903, and 12 more than in 1902; 46 were due to suicide, 10 more than in 1904, 22 more than in 1903, 23 more than in 1902; and 20 were due to homicide, 8 more than in 1904, 10 more than in 1903, and 7 more than in 1902.

The ages of the deceased varied between 23 and 104 years. Below the age of 30, 62 died; above the age of 70, 103; above the age of 80, 239; beyond 90, 23, and 2 had passed the century mark.

The extreme limits of years of practice varied between the year of graduation and 75 years. Eleven died in their year of graduation; 6 had been in practice more than 70 years; 65 more than 60 years; 303 more than 50 years; 629 more than 40 years; 982 more than 30 years; 1,467 more than 20 years, and 1,806 more than 10 years.

Among the notable dead of the year are the following:

Dr. Byron Cook Pennington, Atlantic City, N. J., fourth vice-president of the American Medical Association and chairman of general committee of arrangements for the 1904 session.

Dr. Albert B. Prescott, Ann Arbor, Mich., eminent as a chemist, author and teacher.

Dr. Walter S. Christopher, Chicago, eminent as a specialist on diseases of children, a pioneer for child study and medical inspection of schools.

Dr. Ernest J. Mellish, El Paso, Texas, prominent anesthetist.

Dr. Charles Smart, assistant surgeon-general U. S. Army, eminent as a chemist, a recognized authority on military hygiene and sanitation.

Dr. Henry Putnam Stearns, Hartford, Conn., teacher, alienist and expert on insanity.

Dr. Augustus Palmer Dudley, New York City, gynecologist, teacher and writer.

Dr. James Read Chadwick, Boston, obstetrician and gynecologist.

Dr. John Arvid Ouchterlony, Louisville, Ky., practitioner, teacher and writer.

Dr. Henry Darwin Didama, Syracuse, N. Y., vice-president of the American Medical Association in 1875, dean of Syracuse University College of Medicine.

Dr. Robert Henry Harrison, Columbus, Texas, vice-president of the American Medical Association in 1875, expert on yellow fever.

Dr. James Montgomery Holloway, Louisville, Ky., eminent teacher and practitioner.

Dr. Daniel E. Nelson, Chattanooga, member of House of Delegates of the American Medical Association.

Dr. Ambrose Loomis Ranney, New York City, anatomist and teacher.

Dr. William S. Forbes, Philadelphia, teacher of anatomy and author of original Anatomy Act.

POSTAL CHECK SYSTEM.

A bill has been introduced into both houses of Congress which provides for the printing of one-dollar, two-dollar and five-dollar bills with a blank space for a name. Such a bill could be used as currency until this space is filled in, after which it would be payable only to the individual indicated. In other words, when an individual desires to send one, two or five dollars through the mail he can do so with a postal check with the same safety as with his own check by filling in the name of the individual to whom he wishes it paid. When the payee receives the check he endorses it as he would similar paper, presents it at the nearest postoffice and it is cashed. The only expense to this transaction is two cents for a stamp to be placed on the bill. Certainly if there is anything that the government should provide for the public it is a more simple method of transferring small amounts of money than now prevails. At the present time one has to go to a postoffice, express office or bank for the accommodations these several institutions furnish or send his personal check. In either of the three former cases it costs him time and money; in the latter case it also costs him, or the one to whom the check is sent, more money than by either of the other methods unless he lives in one of the very few large cities, such as Chicago or New York. Recently the clearing house of the Chicago banks has adopted stringent rules by which the banks receive at least ten cents on every check that is cashed by them from out of town, except a few of the very large cities, and more if the amount of the check exceeds $10.00. The adoption by the government of the postal check system would be against the interests of the express companies and the banks, and consequently these two big interests have opposed it. Who will represent the public before Congress? This matter is not of interest to physicians, except that it is of interest to every man who desires to

transfer money from one place to another. THE JOURNAL is particularly interested because it receives thousands of small checks during the year, and the ruling of the banks means an enormous added expense which either THE JOURNAL or the individual sending the check must pay. It is hoped that public sentiment will be so aroused in favor of this advantageous manner of transferring money that Congress will be compelled to adopt the postal check system, in spite of the opposition of the banks and express companies.

THE UNITED PROFESSION IN THE EMPIRE STATE.

In last week's issue of THE JOURNAL, under the head of Association News, appeared letters from the President and the General Secretary of the American Medical Association to the corresponding officers of the reorganized Medical Society of the State of New York relating to the perfected union of the two state medical organizations in the Empire State. That all difficulties in the way of such an union have been overcome, that all legal technicalities have been fulfilled, and that the amalgamation, so long desired, has been accomplished with practical unanimity and in the most admirable spirit, will afford sincere gratification to the entire profession. The congratulatory sentiments expressed by the general officers of the American Medical Association voice the feeling of the entire medical profession of America. With the largest number of physicians of any state of the Union, and with the superb personnel of the profession of New York City and of the entire state, the reorganized society has opportunities such as have come to no other state society. With wise and prudent leadership, and with absolute obliteration of every remnant of past disagreement, the reorganized society will enter a new era of achievement which will surpass all previous accomplishments and which will be worthy of its noble traditions. By affiliation with the American Medical Association its work and influence will be unlimited and will assume the highest importance in the national organization of the profession. The nearly fifty thousand members of the organized profession in America heartily rejoice with their brethren of the state of New York that the union and concord long anticipated have now become realities.

ANOTHER FRAUD CHECKED.

The postoffice department, with the co-operation of the Bureau of Chemistry of the Department of Agriculture, is doing most effective work, in a quiet way, in protecting the public from medical frauds. Of course, this work is not far reaching, for it is limited to those frauds that depend, more or less at least, on the postoffice for their success. We have published accounts of several fraud orders issued by the department, and this week we give space to another. A campaign has been conducted for the postoffice department by the Bureau of Chemistry against "manhood restorers," those which are in the form of medicines, but there have sprung up a number of firms which exploit mechanical contrivances—"developers." These affairs are not only means of swindling the ignorant and deluded out of their money, but they are positively harmful, and with them it is absolutely impossible to accomplish any good. We understand that several other firms handling such contrivances are now under investigation. It is certainly encouraging that there is one branch of the government attempting to check the vultures who are preying on the fears of our youth, and this good work is going on and few know of it—none practically except those directly interested. For some reason the newspapers make no mention of these fraud orders when they apply to medicines, but do so when they relate to commercial affairs.

IS THERE CONCUSSION OF NERVES?

Concussion is a term which found early use in medicine to define a condition produced by violence and described as a "jarring" or "molecular disturbance" of an organ or part without gross or perceptible lesions and accompanied by a more or less complete but temporary suspension of function. For a time the term was applied to almost any organ, but following the increase in our knowledge of actual lesions its use gradually became restricted until at the present time it is seldom used except in connection with injuries involving some part of the nervous system, and even in this connection its applicability to the spinal cord has been strenuously contested by many writers. Archibald Young of London, in a recent article on "Gunshot Wounds of Peripheral Nerves,"[1] declares there is no such thing as concussion of a nerve. This opinion is based on his studies in a number of cases of injuries involving the peripheral nerves during the Boer War in South Africa. Most of these injuries were produced by bullets of various sizes and were just such as theoretically would most likely give rise to the symptoms of so-called concussion in the parts involved or in those immediately adjacent thereto. The occurrence of cases in which a single nerve trunk or cord is picked out from the midst of a closely-related "complex" with the absence of any signs of concussion of the remaining cords of that "complex" on the one hand, and on the other hand cases in which all the constituents save one trunk of a nerve "complex" are involved, would seem to indicate that the symptoms when present must be due to a distinctive injury to the nerve. That the symptoms in some cases may be transitory is clearly shown, but in these cases it is contended that there is always a contusion with swelling, edema, or ecchymosis of varying degree present. As a result of his studies Young concludes that "it is useless, if not, indeed, actually unsound, to adopt any special 'concussion' class of nerve implication associated with gunshot wounds." While it is perhaps possible to conceive of a "molecular disturbance" affecting a mass of cells such as are found in the brain, and which are constantly active, transforming or giving out energy, it becomes an entirely different matter when it concerns a structure which is purely passive in its function, such as a nerve cord, and we thus find the term "concussion" still further restricted in its applicability.

1. Reprint from the Official Surgical Report on the South African War.

MEDICAL SPEAKERS AT ANTISCIENTIFIC MEETINGS.

One of the measures advocated by the new Austrian antiquackery society[1] is that of having bright and able medical men attend meetings of antivivisectionists and other faddists, in order to reply on the spot to statements discrediting science and scientific methods of research. A good example of the power of such work is given in a recent issue of the *British Medical Journal*. Richardson Cross rose and made a telling reply to Stephen Coleridge, an ardent antivivisectionist. Among other things, Mr. Cross asked if the persons present would admit, if it were possible or probable that some useful knowledge of the terrible disease, cancer, might be obtained from investigations under anesthetics of a limited number of animals, that it would not be justifiable. He was cheered frequently and was included in the vote of thanks tendered the speakers. Our British contemporary concludes its description of the meeting with the remark: "It is an unpleasant task to contend against prejudice and stupidity, but if medical men would come forward oftener in defense of scientific progress the itinerant propagandists would be more careful in their statements. As the whole strength of their crusade lies in exaggeration, which is too often left uncontradicted, it would crumble away before the power of the plain truth."

THE IMMIGRATION QUESTION.

During the year ending June 30, 1905, according to official figures, over one million emigrants landed in this country, thus eclipsing all previous records. With such an influx it would seem impossible that all could be of a desirable class, and the question was discussed at some length at the National Conference on Immigration, which recently met in New York. This body, composed of delegates from every portion of the United States and fairly representative of public opinion on this subject, adopted certain resolutions, including recommendation of changes in the present law regulating immigration and the stricter enforcement of existing regulations. Among the changes suggested were the extension of definitions of the excluded classes, defining the term "likely to become public charities" so as to include "all persons of enfeebled vitality, whether such condition is due to defect, inheritance, disease or to advanced age," and advocating the examination of intending immigrants at their homes or at points of embarkation, the requirement from each immigrant of a certified document containing a careful description of the person to whom it is issued similar to a passport, and also the increase of penalties on steamship companies for transporting undesirable immigrants. It is a well-known fact that certain European governments have made a practice of unloading some of their undesirable citizens on this country, and that transportation companies have not been scrupulous in increasing their profits on immigrants. The matter has become of such importance that President Roosevelt, in his recent message, emphatically called attention to these facts and suggested remedies. The matter is one of the questions of present importance for our country. Leaving aside the purely economic and sociologic considerations and taking up only those of medical interest, there is still a good deal to be said on the subject. Besides those actually suffering from physical disease, there is a vast number among the foreigners who land on our shores who are mentally unfitted for the stress of life and conditions they will inevitably meet with here. The result is physical or mental breakdown and the overburdening of our public and private charities, to say nothing of the general deterioration which such an element of the population is liable to induce. The question of urban congestion is also a serious one with many medical aspects, and it is largely contributed to by foreign immigration. The bulk of immigrants nowadays. it is said, do not go into the country as agricultural laborers, but settle down in the cities among those of their own race. The medical profession has the opportunity more than almost any other class of men of studying many of the problems that are involved and of pointing out the way to their solution. It is a matter of public duty which it should not neglect.

1. Gesellschaft f. Bekämpfung des Kurpfuschertums, THE JOURNAL, Dec. 23, 1905, p. 1966.

Medical News

CALIFORNIA.

New Laboratory at Presidio.—The new laboratory for the United States Army General Hospital at the Presidio of San Francisco, erected at a cost of $12,000, is now completed and ready for occupancy.

County Society Meets.—The Los Angeles County Medical Society held its annual meeting December 15, at which Dr. Fitch C. E. Mattison, Pasadena, was elected president, and Dr. R. F. Taylor, Los Angeles, secretary.

Fire in Hospital.—Prompt action on the part of the fire department quickly extinguished a blaze that started in a room adjoining the kitchen at the Clara Barton Hospital, San Francisco, December 9. Fortunately no panic ensued.

Annual Meeting and Banquet.—The San Bernardino County Medical Society held its annual meeting at Arrowhead Hot Springs Sanitarium December 13. In the evening a reception and banquet was tendered by the Arrowhead Hot Springs Company.

Shotgun Quarantine.—A shotgun quarantine has been established in the railroad yards at Mammoth on account of smallpox. Six cases have been reported, all among Mexicans. Armed guards are stationed at each end of the railroad yards and no one is allowed to enter or depart.

Vital Statistics.—There were reported 2,153 deaths in the state during November, 1,699 living births and 1,243 marriages, equivalent to an annual death rate of 15.7, a birth rate of 12.4, and a marriage rate of 9.1 per 1,000. Tuberculosis led among the death causes with 329, followed by heart disease with 211; pneumonia with 185; cancer with 117; apoplexy with 98; Bright's disease with 86; enteritis with 82; accidental injuries with 72, and suicide with 52.

Personal.—Dr. Bartolomeo Sassella, Los Angeles, gave a banquet to 30 guests, December 10, to celebrate his restoration to health after an illness of three months.——Dr. W. LeMoyne Wills, Los Angeles, has returned from Europe.——Dr. J. Wilson Shiels, San Francisco, sailed for Tahiti December 28, for a health trip of one month.——Dr. Louis Q. Thompson, Gridley, is ill with septicemia.——Dr. John J. Tully, Stockton, has gone to New York for nine months.

Annual Meeting.—The Southern California Medical Society ended its semi-annual session at Los Angeles, December 7, with a banquet at the Angelus Hotel, over which Dr. David B. Van Slyck, Pasadena, presided, and Dr. Walter Lindley, Los Angeles, acted as toastmaster. The election of officers, held in the afternoon, resulted as follows: Dr. Howell Tyler, Redlands, president; Drs. Frank Garcelon, Pomona, and William H. Roberts, Pasadena, vice-presidents, and Dr. Henry S. Keyes, Los Angeles, secretary.

INDIANA.

Hospital Opened.—Bloomington Hospital, founded and operated by the Local Council of Women of Blomington, was opened to the public November 30. The institution has accommodation for 14 patients and Miss Blanche Stoops is the superintendent.

The Trembles.—At the recent meeting of the Indiana Academy of Science Dr. Robert Hessler, Logansport, read a paper on milk sickness, or the trembles, in which he gave an account of a five years' search for the cause of this now practically extinct native disease which has always been so mysterious and was such a terror to the early settlers. The disease was known under the name of "trembles" when occurring in animals, and as "milk sickness" when occurring in human beings after the use of milk from an infected animal, or after eating the flesh. The cause (or rather, what will likely be found to be the cause when the investigation is completed) is an undetermined species of *Sterigmatocystis*—a fungus of the class *Ascomycetes*. The organism was found in the blood of an affected horse, both as free spores and as small yeast-like bodies enclosed in leucocytes. The former disappeared in the course of a few days, while the latter kept on increasing, but later on diminished and disappeared by the time the disease subsided. Another horse similarly affected died and was buried before the true nature of the affection was recognized—before the physician heard of it. All tube inoculations from the blood developed pure cultures; growth develops abundantly on all kinds of media.

MARYLAND.

Personal.—Dr. Benjamin R. Benson, Marble Hill, near Cockeysville, Baltimore County, is ill with appendicitis.——Dr. Charles M. Ellis has been chosen president of the National Bank at Elkton, Cecil County.——Dr. Thomas Warfield Simmons of Hagerstown, who was operated on December 28 for bowel trouble, is said to be sinking.

General Hospital Report.—According to the annual report of the Peninsula General Hospital at Salisbury (Eastern Shore), 345 patients were admitted, 240 of whom were white and 212 free patients; 264 were discharged cured, 19 were not treated, and 7 were unimproved. There were 17 deaths, and 19 remained under treatment at the close of the year. Operations were necessary in 170 cases. There were 29 cases of appendicitis treated, the majority of which required operation.

County Society Election.—The Carroll County Medical Society has elected the following officers: President, Dr. J. Howell Billingslea, Westminster; vice-president, Dr. George H. Brown, New Windsor; secretary-treasurer, Dr. Charles R. Foutz, Westminster, and censor, Dr. J. Clement Clark, Sykesville. The society has had a bill framed for submission to the legislature requiring the county commissioners to appoint a health officer for every district in the county at a salary of $50 per annum, in addition to the general health officer, who is also to have special charge of Westminster district and to receive a salary of $150.

Baltimore.

The Bosley Dinner.—Physicians and officials of the health department gave their fifth annual banquet to Health Commissioner James Bosley December 27. Dr. William Royal Stokes was toastmaster.

Osler.—Dr. Osler was to arrive in Baltimore January 5, and during his stay was to be the guest of Dr. Henry M. Hurd at Johns Hopkins Hospital.——A report which originated in a Boston publication that Dr. Osler was thinking of returning to the Johns Hopkins University has been denied by him.

Smallpox Outbreak.—Eleven new cases of smallpox were reported for the week ended December 30. There were 36 deaths from pneumonia and 28 from consumption. The death rate was equivalent to 17.59 per 1,000. The health authorities are much concerned about the prevalence of smallpox, over 80 persons having been sent to quarantine in the past month with the disease or under suspicion. Vaccinators are busy.

MASSACHUSETTS.

Bequest.—By the will of the late Dr. George S. Hyde, Boston, $50,000 is left to Harvard University Medical School, to be used as the trustees see fit and to become available at the death of the sister and brother of the testator.

Tuberculosis Hospital Report.—Long Island Hospital, Boston harbor, has received since 1900, 894 cases of tuberculosis; 421 patients have died; 23 have been discharged well; 157 are improved, and 293 unimproved. The heavy mortality is due to the fact that usually only the most advanced cases are received here.

Music in Hospitals.—During January the following concerts will be given by the Hospital Music Fund under the direction of Dr. John Dixwell: January 7, at Home for Destitute Catholic Children; January 14, at St. Elizabeth's Hospital; January 21, at New England Hospital for Women and Children, and January 28, at the Home for Aged Couples.

Awarded High Honor.—The Boston Board of Health was awarded highest honors for its exhibit at the Lewis and Clark Exposition, Portland, Ore. The exhibit consisted chiefly of illustrations and explanations of the treatment of infectious diseases as developed and practiced by the board in Boston. The milk inspector of the board has recently secured convictions of 13 milk dealers for selling milk not up to the standard, of 4 others for selling adulterated vinegar, and one dealer for selling condensed milk adulterated with formaldehyd paid $100 fine. A local druggist has also been fined $25 for selling olive oil adulterated with almond oil, his conviction being secured by the State Board of Health.

Tuberculosis Exhibit.—For the success of the state tuberculosis exhibit, to be given in Faneuil Hall the last of December, a strong auxiliary committee has been appointed. The medical men include Drs. William T. Councilman, Harold C. Ernst, Vincent Y. Bowditch, Samuel H. Durgin, James J. Minot, A. G. Getchell, H. Lincoln Chase, Arthur T. Cabot, Arthur K. Stone, Charles W. Page, Edward O. Otis, Frank G. Wheatley and Walker Marcley. It is hoped to reach people in every walk of life and to announce to them the fact that there will be such an exhibit. Notices are, therefore, being sent out to those who are in touch with groups of people, such as physicians, clergymen, teachers, charitable organizations, fraternal orders, etc. Young physicians chosen by Dr. William T. Councilman will act as guides.

Hospital Reports.—Worcester Insane Hospital reports that there were admitted during the year ended October 1, 307 men and 264 women, making a total of 1,226 patients resident there at that date. 619 men and 607 women. Of the men admitted 52 had been laborers, 20 operatives, 13 machinists and 12 carpenters. Of the women 49 had been housewives, 32 domestics and 23 housekeepers. Alcohol was the cause assigned for the condition of 77 men and 15 women, while weak constitutions accounted for 23, heredity for 32, sickness for 15, senility for 20, excessive tea drinking for 5, overwork for 1, bereavement for 7, fright for 1 and worry for 5.——Westboro Insane Hospital reports for the same period 538 admissions. Of those admitted for the first time 193 were American born and 134 of foreign birth. There were 133 deaths during the year.

NEW YORK.

New York City.

Pure Food Show.—A pure food show will be held in this city during the entire month of February under the direction of the Retail Grocers' Union. Several associations interested in the pure food movement will hold meetings throughout the month and there will be lectures by pure food experts.

Low Death Rate Again.—The death rate for the week ended December 23 was equivalent to an annual mortality of 17.20 per 1,000, as compared with 19.07 per 1,000 for the corresponding week of last year. There were 82 deaths from violence, while the deaths from contagious diseases were very few.

Personal.—Dr. Thomas Darlington has been reappointed commissioner of health at a salary of $7,500 per annum.——Dr. and Mrs. William Osler arrived on the *Caronia* from Europe on December 24.——Dr. Samuel F. Brothers has been appointed a chief clerk at a salary of $3,000 per annum.——Dr. Charles B. Kelsey was recently robbed by his butler of valuable silverware.

New Health Building in Brooklyn.—This new building, for which $295,000 has been appropriated by the board of aldermen, will be erected in Brooklyn and will have 10,000 square feet of space, one-half of which will be for offices. These are to be separate from the general building. There will be an electric light plant and a modern system of ventilating. There will be a separate clinic and isolation wards.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended December 23, 764 cases of measles; with 12 deaths; 312 cases of tuberculosis, with 174 deaths; 300 cases of diphtheria, with 39 deaths; 170 cases of scarlet fever, with 6 deaths; 72 cases of typhoid fever, with 9 deaths; 15 cases of cerebrospinal meningitis, with 15 deaths, and 206 cases of varicella. A total of 1,839 cases and 255 deaths.

Patched-Up Immigrants.—Dr. Maurice Fishberg, special inspector of the immigration service of the United States, who has been visiting European terminals of the transatlantic steamship lines, claims that the "curing" of diseased aliens for admission to the United States has become a great industry abroad. He referred especially to the fixing up of cases of trachoma, and suggests that Marine-Hospital officials should be stationed at all the important immigrant stations of Europe. Dr. Fishberg emphasized the fact that comparatively few fakers succeeded in fooling the inspectors at Ellis Island. The use of adrenalin in cases of trachoma could easily be detected.

Much Milk Destroyed.—In the eleven months ended December 1 the Department of Health collected $16,000 in fines imposed by the Court of Special Sessions on dealers who offered adulterated milk for sale. In the same period the inspectors poured 38,000 gallons of milk into the gutters as unfit for use, in most instances because it had a temperature of over 50 degrees F. The city daily consumes about 1,500,000 quarts of milk, and only 15 men are employed for the purpose of inspecting this supply. It is estimated from the number of convictions that more than 20,000,000 quarts of adulterated milk have been brought into the city during this period. There were 110,000 samples taken for inspection for adulteration and 6,000 samples were taken for chemical analysis during the two hot months of summer.

Results of Use of Pasteurized Milk.—The records of the Health Department show that in 1892 there were in the city 194,214 children under the age of 5 years and that 18,684 died in the year, the rate being 96.2 per 1,000. Pasteurized milk began to be used and in 1894 out of 256,137 children there were only 16,137 deaths, or 63 per 1,000. At the death rate of 1892 with the present population there would have been 24,640 deaths, whereas there were actually only 16,137, so that apparently there were 8,503 lives saved. Estimated on this basis, it is claimed that there were 4,025 lives saved last summer. On Randall's Island, where the city's children are cared for, the death rate prior to 1898 was 41.83 per cent. After Nathan Strauss established a pasteurizing plant on the island the death rate was cut down to 20.75 per cent. for the past seven years. Last year the rate among these children was only 16.52 per cent. This reduction in the mortality is caused entirely by the pasteurized milk, as other conditions were unchanged.

Hospital Notes.—The annual collection of the Hospital Saturday and Sunday Association was held in the various churches December 21. The association now has 40 hospitals on its list. During the last year the association cared for 53,000 patients, of whom 33,774 were free patients, besides giving medical attention to 314,838 dispensary patients.——Plans have been filed for a new six-story and basement building, to be erected in Central Park West for the New York Red Cross Hospital, to cost $60,000.——Thomas F. Ryan has given $1,000 to the New York Throat, Nose and Lung Hospital to fit up a special department for the treatment of women affected with tuberculosis.——The Presbyterian Hospital, in appealing for funds, asks that non-residents contribute because they so often receive aid in times of emergencies, and it is only fair that they should aid in the support of this institution.——Several persons whose names have appeared on the list of directors of St. Gregory's Society, organized to manage St. Gregory's Hospital, started by a "beauty doctor," are complaining that their names have been used without authority and that they are not interested in the society or hospital.

NORTH CAROLINA.

Society Meetings.—The Randolph County Medical Society has elected the following officers for 1906: President, Dr. S. A. Henley, Ashboro; vice-president, Dr. W. I. Sumner, Randleman, and secretary, Dr. Charles C. Hubbard, Worthville. Dr. Henley presented an instructive paper dealing with the history of the older members of the medical profession of Randolph County.——The Buncombe County Medical Society elected as officers for 1906: President, Dr. Thomas P. Cheeseborough; vice-president, Dr. William L. Dunn; secretary, Dr. Gaillard S. Tennent, and delegates to state society, Drs. Marshall H. Fletcher and Willard P. Whittington, all of Asheville.

Buncombe County Society Banquet.—The tenth annual banquet of the Buncombe County Medical Society was held in Asheville December 18. Covers were laid for 60, a most elaborate menu was served and numerous postprandial speeches were delivered. During the four and a half hours' duration of the feast the orators covered an almost limitless field, ranging from grave dissertation on the advisability of standing by the American Medical Association and the revised pharmacopeia, the establishing of a public abattoir for Asheville, with sundry suggestions as to hygiene and public health, to a most vivid delineation, in prose or verse, of the supposed and real fancies, weaknesses and frailties of the various prominent members of the profession. Of particular note among the speech makers were Drs. Ambler, Weaver, Fletcher, Calloway, Brown, Seveir, McBrayer, Whittington, Archer and J. Howell Way, the secretary of the state society, who was present as an invited guest of the society. The affairs medical of Asheville and Buncombe County are in most excellent condition. A very considerable portion of the happy state of affairs existing here is attributable to the potent influence of the county society on its membership through it regular semimonthly meetings.

The Indigent Insane.—The governor attended the regular meeting of the directors of the state hospitals recently and caused a complete investigation to be made of the commitment papers and other data bearing on the case of each patient under treatment in the two insane hospitals of North Carolina, and as a result of his careful investigations the absurd charges of the daily press of the state that persons not entitled to receive treatment at the expense of the state were received and treated, were shown to be without foundation. In this connection it may be of interest to note that the question as to the "indigency" of patients treated in the state hospitals at public expense has already been passed on some time since by the Supreme Court of the state and the decision of what an "indigent" is in North Carolina rendered in case Hybart, 119 N. C., 359, in the following language: "The term 'indigent insane,' as used in section 10, article II, of the Code, includes all those who have no income over and above that which is sufficient to support those who may be legally dependent on the estate." With this decision of the Supreme Court for guidance, the investigating committee reported less than half a dozen of the 2,000 patients as not being entitled to the care of the state in the institutions.

OHIO.

Personal.—Dr. and Mrs. Silas W. Fowler, Delaware, will sail from New York February 8, for the Mediterranean.——Dr. S. E. Allen has been appointed by the board of public service as next health officer of Cincinnati from January 1.——Dr. George P. Tyler, Ripley, has for the third time been appointed chief surgeon of the Ohio River & Columbus Railroad.

Darke County Medical Society.—The medical society of this county held its regular meeting on December 14 at Greenville. The following officers were elected: President, Dr. Matthias M. Corwin, Savona; vice-president, Dr. William Lynch, Greenville, and secretary and treasurer, Dr. Philip Dickes, Greenville. An enjoyable banquet was held in the evening.

Auglaize County Society.—At a meeting of the Auglaize County Medical Society, held at Wapakoneta December 14, Dr. John E. Griewe of Cincinnati, read a paper, "The First Principles in the Treatment of Heart Lesions," illustrated by some twenty diseased hearts. In the banquet in the evening, at which Dr. Charles C. Berlin, Wapakoneta, acted as toastmaster, speeches were made by Drs. Brooks F. Beebe and Charles A. L. Reed, Cincinnati; Dr. Frank D. Bain, Kenton, and Dr. Henry E. Beebe, Sidney, Ohio. Ninety-three per cent. of the physicians of the county are members of the society. This is believed to be the largest proportion of any county medical society in the state.

PENNSYLVANIA.

Physician's Bill Disallowed.—The commissioners of Lackawanna County have refused to pay the bill of $2,000 of Dr. Alfred Gordon, Philadelphia, for nine days' attendance at court and for giving expert testimony.

Personal.—Dr. Charles D. Schaeffer has been selected acting mayor of Allentown during the absence of Mayor Dr. Alfred J. Yost.——Dr. Howard S. Anders, Philadelphia, delivered an address before the Lebanon County Medical Society on "The Practical Relations of Certain Physical Signs to Prognosis and Treatment."

Pennsylvania Relief Report.—The monthly report of the Employes Relief Fund for the Pennsylvania Railroad Company's lines east of Pittsburg and Erie shows that the payments of benefits for November amounted to $113,609.91, $45,739.26 on account of deaths and $67,870.65 on account of disablement by sickness and accident. The payments thus far are stated to have amounted in the aggregate to $14,217,475.85, $5.843,839.64 on account of deaths and $8,373,636.21 on account of disablement.

Philadelphia.

South Branch Society Election.—Dr. Joseph O'Malley was elected president of the South Branch of the Philadelphia County Medical Society, and Dr. James H. Baldwin was re-elected secretary, at the regular meeting, December 29.

Natural Science Officers.—At the annual meting of the Academy of Natural Sciences, December 19, Dr. Samuel G. Dixon was elected president; Dr. Edward J. Nolan, recording secretary and librarian; Dr. Charles B. Penrose, councilor for three years, and Dr. Horatio C. Wood, councilor to fill unexpired term.

Personal.—Dr. James Tyson was a guest of honor at a reunion of the District of Columbia Alumni Association of the University of Pennsylvania, held in Washington, December 12. ——Dr. George L. Husband fell from a trolley car December 28 and received a severe injury to his head. He was taken to the Presbyterian Hospital.

College of Physicians Library.—The library of the College of Physicians in this city, one of the greatest medical libraries in the world, contains 73,750 volumes, 8,363 unbound reports and transactions, 19,540 theses and dissertations, and 56,265 unbound pamphlets. The library receives 611 current medical, pharmaceutical and dental journals, including American, English, French, German, Italian, Spanish, Russian and Chinese. The library is open daily to visitors, excepting Sunday and legal holidays, from 10 a. m. to 6 p. m.

Free Exhibition of Tuberculosis.—How to fight consumption will be the principal thought of the free exhibition of tuberculosis, to be held in this city from January 22 to February 3, under the auspices of the National Association for the Study and Prevention of Tuberculosis and the Pennsylvania Society for the Prevention of Tuberculosis. Model tents and fresh-air sanitariums will be on exhibition. Every effort will be made to show the general public how fresh-air treatment may be applied with good results in their city homes. Public lectures will be delivered daily.

Symposium on Exophthalmic Goiter.—A special program has been arranged for the Section on General Medicine of the College of Physicians on January 8. A symposium on exophthalmic goiter will be held, at which Dr. George Dock of Ann Arbor, Mich., will read a paper on "The Clinical Observations on Exophthalmic Goiter (Graves' Disease), with Special Reference to Complete and Incomplete Forms; the Clinical Course and the Treatment"; Dr. James Tyson will discuss the medical treatment, Dr. W. G. McCallum the pathogenesis, and Dr. Joseph C. Bloodgood, of Baltimore, the surgical treatment.

Health Report.—The total number of deaths reported for the week aggregated 491, as compared with 524 reported for last week, and 497 for the corresponding week of last year. There were 136 new cases of typhoid fever reported, which is an increase of 17 over the number reported last week. The principal causes of death were: Typhoid fever, 14; measles, 3; diphtheria, 8; tuberculosis, 61; cancer, 16; apoplexy, 19; heart disease, 49; acute respiratory disease, 73; enteritis, 21; appendicitis, 3; Bright's disease, 43; suicide, 8; accidents, 20, and marasmus, 10. There were 262 cases of contagious disease reported, with 22 deaths, as compared with 274 cases and 29 deaths in the previous week.

VERMONT.

University News.—Dr. John M. Wheeler, Burlington, has been appointed instructor in anatomy in the medical department.——Obstetrics and surgery have been transferred from the second to the third year, and a new compulsory course in experimental physiology has been instituted.

Many Illegal Practitioners.—About 150 physicians in the state are technically illegal practitioners as they have failed to comply with the act of the legislature passed in 1904, which required that all physicians file their licenses with their respective county clerks prior to Jan. 1, 1905.

The Proctor Tuberculosis Sanitarium.—Senator Proctor is in accord with the modern efforts to stamp out tuberculosis. As previously announced, he has, at the request of his children, donated $50,000 to purchase ground and erect a sanitarium for the treatment of incipient tuberculosis near Proctor. It is to be a state institution, but free of expense to the state, and to this end he has further made an endowment of $100,000 for its maintenance. The company of which Senator Proctor is president maintains a large free hospital and training school and an emergency service near their quarries at Proctor. The hospital will be located in Pittsford, according to the decision of the state tuberculosis commission.

VIRGINIA.

A Mother at Ten.—A very unusual occurrence has just come to light at Bristol. Sallie Ellison, a colored girl, who was 10 years old last October, has given birth to an eight-pound infant.

Radford Hospital.—La Belle Inn, formery built as a hotel at Radford, has been leased for a hospital and will be at once put in perfect repair. The hospital is to be operated by McArthur Brothers of New York, the contractors who hold the contract to build 125 miles of the Tidewater Railroad through that section. The institution will not be limited to the employés of the road, but one floor will be turned over to the physicians of the locality.

GENERAL.

Yellow Fever in Cuba.—A few new cases of yellow fever are still being reported. In nearly all cases the infection can be traced to Habana. The immunity requirement has been removed for passengers for southern ports, including Florida. All non-immune individuals, however, are carefully inspected before being allowed to embark.

American Dermatological Association.—At the twenty-ninth annual meeting of the American Dermatological Association, held in New York City, Dec. 28-30, 1905, the following officers were elected for the ensuing year: President, Dr. M. B. Hartzell, Philadelphia, Pa.; vice-president, Dr. Thomas C. Gilchrist, Baltimore, secretary and treasurer, Dr. Grover W. Wende, Buffalo, N. Y. The next meeting will be held in Cleveland, Ohio, in May, 1906.

The National Association for the Study and Prevention of Tubercuosis.—Announcement is made by the board of directors of the National Association for the Study and Prevention of Tuberculosis of the preliminary arrangements for the second annual meeting of the association, which will be held in Washington, May 17, 18 and 19, 1906. Two new sections have been established—one on surgical tuberculosis and the other on tuberculosis in children. The officers of the sections are as follows:

Sociological Section: Chairman, Mr. William H. Baldwin, Washington, D. C.; secretary, Miss Lilian Brandt, New York.

Clinical and Climatological Section: Chairman, Dr. Vincent Y. Bowditch, Boston, Mass.; secretary, Dr. Edwin A. Locke, Boston, Mass.

Pathological and Bacteriological Section: Chairman, Dr. Edward R. Baldwin, Saranac Lake, N. Y.; secretary, Dr. Hugh M. Kinghorn, Saranac Lake, N. Y.

Section on Surgical Tuberculosis: Chairman, Dr. W. W. Keen, Philadelphia, Pa.; secretary, Dr. Robert G. Leconte, Philadelphia, Pa.

Section on Tuberculosis in Children: Chairman, Dr. W. P. Northrup, New York City; secretary, Dr. Roland G. Freeman, New York.

CANADA.

Personal.—Dr. Robert C. Hiscock, formerly of Kingston, Ontario, has been appointed government inspector of health at Lagos, West Africa.——Dr. Charles Sheard, medical health officer of Toronto, has been investigating the smallpox outbreak in eastern Ontario, along with the secretary of the provincial board of health, Dr. Charles A. Hodgetts. Dr. Sheard considers that matters in connection with smallpox in eastern Ontario are in an unsatisfactory state.——Lieutenant-Colonel Carleton Jones, M.D., has resigned his position as assistant port officer at Halifax to become chief medical officer to the Canadian militia stationed at Halifax.

Hospital News.—The Winnipeg General Hospital has received a gift from the Ladies' Hospital Aid of that city of $1,651.——The total number of patients treated in the Winnipeg General Hospital during the week ending December 9 was 380, of whom 233 were men, 88 women and 59 children. The number in the outpatient departments was 109.——The governors of Notre Dame Hospital, Montreal, held their annual meeting on December 12. The annual report showed a slight increase in the number of patients over the previous year. During the year 2,230 patients were treated, and each of these patients cost the hospital $1.13 a day. Of the entire number treated 1,303 were men and 927 women. There were 165 deaths during the year, but of this number 53 patients were brought into the hospital in a dying condition. In the different outdoor departments of the institution there were 20,991 consultations.

Ontario Smallpox Law.—Dr. Hodgetts, secretary of the Ontario board of health, in view of the prevalence of smallpox in various sections of Ontario, has deemed it necessary to call the attention of the people to the law in connection therewith. This law requires that all children shall be presented for vaccination within three months after birth to an officer appointed

by the municipality, to a medical practitioner, or to the hospital authorities. The law also requires that the child shall be returned for verification on the eighth day. Dr. Hodgetts also calls the attention of the trustees of the various hospitals throughout the province to the fact that not in one single instance are they obeying the law, which requires that they shall keep a supply of vaccine, be prepared to vaccinate the poor free of charge, and all others at a maximum fee of 50 cents. The Ontario law also requires that no pupil shall attend school without first presenting a certificate showing successful vaccination.

College and University News.—The reading rooms in connection with the medical department of Toronto University are in a more satisfactory condition this term than ever before. This is due to the activity of the present student executive committee. All daily papers, leading magazines and medical journals are on file.——The building of the College of Physicians and Surgeons of Ontario in Toronto has been sold for $100,000. The money thus obtained will be devoted to the purposes of a new building, properly equipped and for the purposes of the college alone.——The medical department of Queen's University, Kingston, Ont., will seek a grant of $75,000 from the Ontario government for the purposes of a new medical building in connection with that university, and at the same time will ask for an annual grant of $7,500 to sustain it.——A petition signed by over 1,200 medical students of Canada has been presented to Dr. Pyne, minister of education in Ontario, asking that the government introduce at the coming session of that body the necessary legislation to ratify the Canada medical act of 1902, which is familiarly known as the Roddick bill. All the provinces of Canada have passed this legislation with the exception of Ontario, Quebec and British Columbia. Quebec refused it.

FOREIGN.

Honors for Gutierrez.—Professor Gutierrez, the prominent gynecologist of Madrid, was recently decorated with the grand cross of the Order of Alphonso XII. His friends tendered him a banquet on the occasion.

Borax in Milk.—The county medical officer and the analyst of Middlesex County are soon to submit a report to the Middlesex County Council recommending the total prohibition of the use of boracic acid, coloring matter, or preservatives in any form, in milk, the use of such to be made an offense under the food and drugs act.

Children Excluded from Laundries in France.—A recent decree in France excludes children under 18 from workrooms in which soiled linen is being handled without previous disinfection. This step has been taken on account of the danger of infection from the dust shaken out of the dry soiled clothes while they are being sorted.

Bubonic Plague at Spain.—The steamer *Oropessa*, from South American ports, arrived at Corunna, Spain, December 17. Passengers were not permitted to land owing to the fact that there were 3 cases of bubonic plague on board. The port authorities did not permit the cargo to be unloaded. The steamer sailed for La Pallice, France.

Cremation in Tasmania.—The Tasmanian legislature has passed a bill making it unlawful to cremate unidentified bodies or to practice cremation in cases in which the attorney-general, coroner or police magistrate forbids it. To cremate any body the consent of the chief secretary must be obtained, and the cremation must be done in an approved place.

New Hospital Buildings.—The new buildings of University College Hospital, London, have been completed. Eighty-six additional beds are now available for use. The cost of the rebuilding was defrayed by the late Sir J. Blundell Maple, but the committee appeals for more annual subscriptions to meet the increased expenditures due to the larger number of beds now in use.

Commercial Science and Tariff Reform.—A new museum and laboratories of zoology in connection with the University of Liverpool have been opened recently by Lord Onslow, who said that the blessing which Great Britain enjoyed in the cheapness of food was much more largely due to the inventions of science than to any fiscal relations which could possibly be established with other countries.

The Kussmaul Prize.—In 1903 Professor Czerny of Heidelberg endowed a prize in memory of Kussmaul, the well-known clinician, his father-in-law. The prize consists of a gold portrait medal and 1,000 marks (about $250) in money. It is to be awarded every three years, as already mentioned in these columns, for the best therapeutic achievement (*therapeutische Leistung*) first published in German literature.

Special Course in Hygiene.—The University of Lyons, France, has inaugurated a special course in hygiene entitling to a diploma. The final examinations in chemical, microscopic and bacteriologic technic as applied in hygiene will include practical tests supplemented by oral examination in public and school hygiene, in sanitary engineering and legislation and epidemiology. The *Semaine Médicale* states that medical students who have passed four examinations and duly qualified French and foreign physicians are eligible for the course.

Research on Sleeping Sickness.—About $30,000 has been appropriated by the German government to defray the expenses of a scientific mission to Eastern Africa to study sleeping sickness. The party will include an expert protozoologist and a bacteriologist with a physician familiar with the conditions in Eastern Africa. The expedition will probably require 18 months for the research. Sleeping sickness is not prevalent yet in the German colony, so the party will probably locate in the adjoining Uganda district. The *Deutsche med. Wochft.* hints that Koch may head the expedition.

Gloomy Hospital Outlook in London.—In a recent issue, *Hospital* states that many London hospitals, in consequence of overbuilding and other forms of ill-considered expenditure, are extremely embarrassed financially. They are in the custom of continually exceeding their income, trusting to a "windfall" or to a special appeal to reduce the accumulated debt. As a result the general outlook is gloomy, and several institutions are contemplating closing some of their wards. The announcement has been made that in London there are 1,000 hospital beds empty owing to lack of funds.

International Congress of Alimentary Hygiene.—A society for scientific alimentation has been organized in France, and it has issued an appeal for an international congress to be held at Paris February 26 to March 6, 1906. It will be divided into the two sections of scientific researches and their practical application in daily life. The society proclaims that the masses do not obtain as much nourishment from their food at present as they should for the expense, and the congress is summoned to discuss the various aspects of the subject from different points of view, especially the sociologic and economic.

Imprisoned for Fraud.—A certain physician took a position with a Leipsic sickness insurance society when its medical officers had resigned in a body and the *Leipziger Verband* was warning others against accepting a position with the society. He was given $1,500 by the organized physicians to withdraw after they had made a satisfactory agreement with the society. He took the money, but failed to state that he had already entered the service of a similar society in a nearby city in the same rôle. The Leipsic court condemned him to two months' imprisonment for obtaining money on false pretenses.

Success of Vaccination of Cattle Against Tuberculosis.—The *Presse Médicale* of December 6 reports the findings when the calves vaccinated according to von Behring's method a year ago at Melun, France, were slaughtered. Vallée had the experiments in charge, and used 40 calves, keeping half of the number for controls. Ten other calves in an infected stable were also vaccinated at the same time and none of these has contracted tuberculosis. The great contrast between the advanced, diffuse lesions of the controls and the circumscribed relics of the inoculation in the animals inoculated was most striking. The report confirms the results published in Germany.

The Cocain Habit in India.—It is reported that the cocain habit is spreading to an alarming extent among the natives of Upper India. The Mahometans in the Benares division recently sent a deputation to invoke the aid of the government in preventing the sale of cocain to young men and boys. An inordinate consumption of this drug has also been reported from Cawnpore, Lucknow and other parts of the United Provinces, and a bill to amend the excise act has been laid before the provincial legislative council, which, it is hoped, will diminish the number of victims of this pernicious habit. Eradication of the evil by legislation has been tried in Bombay, Bengal and Burmah.

Action of Radium in Hydrophobia.—Tizzoni's interesting experimental research with radium in rabies and vaccination against the disease were mentioned in the last volume, page 1934. The Italian authorities are so impressed with the possible value of his work that funds have been appropriated to enable him to purchase the quantity of radium necessary to apply the radium treatment to man. He thinks that about

6,000,000 radioactive units will answer the purpose, judging from the effects on rabbits of 100,000 units. An interesting feature of his research is that the effectual therapeutic dosage can be estimated from the radioactive properties acquired by the part treated. The Roentgen rays do not influence rabies.

Prize for Calmette.—Professor Calmette of Lille, director of the Pasteur Institute there, and well known for his researches on antiserums for snakebites, has been awarded the Audiffred prize given by the Paris Académie des Sciences Morales et Politiques. This prize of 15,000 francs ($3,000) is awarded to recompense devotion—"les plus beaux, les plus grands dévouements"—of any kind. It was through Calmette's efforts that the first antituberculosis dispensary was founded, and the one thus started has proved a model in every respect. Its work is supplemented by extensive oversight and assistance of the tuberculous at their homes. Another feature of the dispensary is the official sent to the factories and elsewhere to discover incipient cases of tuberculosis even before the subject himself realizes that he is infected.

Plague in Japan.—Passed Assistant Surgeon Moore reports from Yokohama that plague continues to spread in Osaka and Kobe. In the former city 18 probable cases, with 14 deaths, occurred during the period from October 27 to November 15. In Kobe for the period from November 8 to 15, 7 cases were reported. A plague-infected rat was discovered recently in Tokio. Thus the present plague situation in Japan justly gives rise to considerable apprehension, tempered, however, by the recollection of the success which has attended the efforts of the authorities in coping with previous outbreaks of this infection. It again may be noted, says Dr. Moore, that a large proportion of Japanese emigrants for Hawaii, even of those taking passage at Yokohama, pass through Kobe and Osaka en route. The situation seems to demand extraordinary precautions.

Results of Antityphoid Vaccination.—The first reports have been received from the German troops who were vaccinated against typhoid before leaving for their station in southwestern Africa, as described in THE JOURNAL at the time. Out of 424 cases of typhoid fever reported from the station, 100 of the men had taken the preventive vaccination. The protection conferred is thus not absolute, but the vaccinated cases were distinguished by the mildness of the disease, the absence of complications and the small mortality. The *Deutsche med. Wochft.* for November 16 tabulates the details of the cases among the vaccinated and the unvaccinated for comparison, noting especially the preponderance of extremely light cases among those who had been vaccinated more than once. The total mortality was 4 per cent. of the 100 vaccinated men and 11.1 per cent. of the others.

The Medical Curriculum in Melbourne.—The following amendments in the medical curriculum at the University of Melbourne, which have been under discussion for some time, have been decided on: 1, The teaching of organic chemistry in the first year, to enable students to understand pathology; 2, the teaching of anatomy and physiology in the second year, as a groundwork for surgery later on—the work of the second year to be confined to anatomy and physiology; 3, the commencement of hospital and surgical work in the third year; 4, the lessening of the number of examinations by cutting out the examinations at the end of the second and fourth years, it having been found that the practice of holding the examinations in pathology at the end of the fourth year resulted in the neglect of medicine and surgery until the fifth year: 5, in future, students must attend hospitals for the study of all diseases, instead of two optional diseases, but this work may be done after examination if the student wishes.

Plight of the Medical School at Rome, Italy.—All medical visitors to Rome have been impressed with the imposing Policlinico, which has been fifteen years in building and has cost already more than four million dollars. It was designed by Baccelli and is regarded as a triumph of medico-educational architecture. The wards have been occupied by the sick for several months, but the educational equipment has been neglected, the government postponing from year to year the appropriation of the quarter of a million required to furnish and equip the lecture rooms, laboratories, etc. The Policlinico is located on the outskirts of the city, and the medical students receive part of their instruction there, and then have to go to the other great hospital on the opposite side of the city and elsewhere for the rest of the teaching, hours being thus wasted in transportation besides the considerable expense for car fare. The students have finally rebelled and gone on a strike, the situation being quite serious, according to a letter from Rome in the last *Lancet*, as the faculty are helpless in the matter.

Dismissal of Suit Against Two French Physicians.—The long litigation in which Drs. Séné and Chiché of Bordeaux have been entangled since 1899 has finally resulted in their honorable acquittal. Dr. Séné ordered the removal to the quarantine station of a pregnant woman who had arrived from an infected port and presented symptoms of yellow fever in an advanced stage. Dr. Chiché had charge of the case, but was unable to save the patient. Her father sued the two doctors for damages, alleging malpractice, neglect, etc. He demanded that the body be exhumed, when it was found that the seven-months' fetus had been expelled by postmortem gas formation. The newspapers made a sensational affair of this coffin birth, and for six years the two doctors have been summoned from court to court and subjected to endless annoyance simply because the first had done his duty in protecting the public health and because the second had been unable to save a moribund pregnant woman. Our French exchanges comment with considerable seriousness on this case and the possibilities confronting the custodians of the public health which it suggests.

Seventh International Congress of Working Men's Insurance.—For the first time in the history of these congresses the fraternities, lodges and other mutual benefit and governmental insurance societies took a prominent part in the proceedings of this large and animated congress. This is important in view of the statement by one of the speakers at the recent Tuberculosis Congress, that when such societies once wake up to the fact that it will be to their direct pecuniary benefit to stamp out tuberculosis among their policy-holders, that a great onward stride will have been taken in the extermination of the scourge. The mutual benefit societies are gaining ground in every country, and their membership is becoming enormous. Once enlisted on the side of preventive medicine, their influence would be far-reaching. The proper remuneration of the medical officers of these and similar insurance societies is one of the vital questions abroad. As at present conducted, it was said, the medical official is the only one who does not profit by the mutual benefit plan or governmental insurance. An editorial in THE JOURNAL for December 23 depicted the wide scope of insurance of work men and women against sickness, accident and old age as it has developed in recent years in Europe.

Fourth International Congress of Insurance Examiners.—This congress will be held at Berlin Sept. 11 to 15, 1906. The subjects announced for discussion are early signs of a tendency to tuberculosis; obesity in relation to life insurance; influence of syphilis on length of life, and the vaccination clause in insurance contracts; also the influence of accidents in case of internal disease; acute aggravation of insanity through accidents; influence of injuries on organic spinal disease and mental derangements, and the criterion of the aggravation of all functions (nervous diseases, neurosis) through accidents. Reports are being prepared on all these subjects in each country to be represented and the minutes of the proceedings will be sent to members in English, French and German. The meetings will be held in the parliament buildings. The membership fee is 16 marks ($4). The organizing committee includes fifty-nine of the prominent physicians of Germany, and an urgent appeal is made to all examining physicians for insurance companies to take part in the congress either personally or by subscription alone, which will entitle the member to all the transactions, etc. Contributions for the congress may be in English, French or German, but not to exceed 8 to 16 printed pages. They should be accompanied by a summary not more than a page in length. Further details can be learned on application to the general secretary, Dr. A. Manes, Berlin W. 50, Spichernstrasse 22.

Smallpox and Yellow Fever in Brazil.—Consul Aymes reports that there is a great deal of yellow fever in Para and that the epidemic of yellow fever is assuming serious proportions. He states that every year during the last four months of the year—the dry season—there is a marked increase in the number of cases of both smallpox and yellow fever. This year the season is unusually dry and hot, and both diseases have assumed the character of an epidemic, and Mr. Aymes reports that it is becoming evident that the smallpox epidemic is extending to the neighboring towns and villages. His attention was first called to the severity of the nascent epidemic late in September. Smallpox patients are isolated in a special hospital, which is now accommodating twice the number it was built for. Temporary wings of rough lumber are being erected and a second hospital has been taken for the shelter of smallpox patients. As there is no system of registry of cases of contagious and infectious diseases, it is difficult to obtain exact statistics. There is also, he states, a large and increasing num-

ber of cases of typhoid fever in this city. The yellow fever and smallpox patients are not confined to the lower or even to the middle classes, but all alike suffer. Foreigners in particular are liable, and scarcely one in Para has escaped one or the other disease; the number of deaths among the foreign colony is large. The rains will not set in before the middle of December; when they do begin it is said that in both diseases the cases rapidly begin to diminish in numbers and intensity, particularly smallpox.

New Isolation Hospital at Rotherham, England.—The new Rotherham Isolation Hospital, the foundation stone of which was laid nearly two years ago, was opened formally December 7. The total expenditures, including land, building and furniture, were a little over $95,000, and 33 beds for male patients and 33 beds for female patients have been provided. The buildings consist of an administrative and six other blocks, including the laundry, disinfector, and discharge lodge, and the observation ward. Separate provision has been made for acute and mild cases of scarlet fever. This rapid conversion into practice of the very modern conception that the aggregation of severe and mild cases of scarlet fever is dangerous is a notable and specially creditable feature. The distribution of beds is of some interest: 18 beds are assigned to severe scarlet-fever cases, 16 to those of milder type, 14 each to diphtheria and typhoid, and 4 beds in two separate wards to observation cases. The buildings lie on elevated ground, about one and one-fourth miles from the center of the town, and have five and three-fourths acres of ground devoted to them; the different blocks are, therefore, well separated. All the wards face southeast, and each is provided with a glass-covered veranda for the use of convalescent patients; each block, moreover, forms a complete and independent unit by itself, being provided with its own kitchen, bathrooms and stores. The ventilation is natural fireplace ventilation, supplemented by outlet shafts in the ceilings, and grids under each bed. The scarlet-fever patients have an allowance of 2,106 cubic feet of air space, and 156 superficial feet floor space, while the diphtheria block is provided with a small operating theater.

To Collect Statistics of Syphilis and Alcoholism.—The Paris Académie de Médicine has been discussing the question of compulsory declaration by physicians whether alcoholism or syphilis was the direct or indirect cause of death. A number of speakers said that the defective statistics gathered by such means did more harm than good. The figures showing that only 145 deaths had occurred in Paris last year from alcoholism—as stated in the official statistics—were extremely misleading to laymen. A resolution was finally adopted by the academy to the effect that it would be desirable to add to the present death certificates the following lines on a detachable coupon:

$$\left.\begin{matrix}\text{Alcoholism}\\ \text{Tuberculosis}\\ \text{Syphilis}\end{matrix}\right\} \text{is the cause} \left\{\begin{matrix}\text{principal}\\ \text{accessory}\end{matrix}\right\} \text{of death.}$$

The physician signing the certificate should underline the words that apply to the individual case. This resolution was supplemented by another from which much more is hoped, namely, that medical societies and associations of surgeons, obstetricians, alienists and others take up the matter and request those of their members willing to take a personal interest in the question to compile personal statistics, to be published ultimately by the organizations and filed for reference. Personal statistics collected by physicians at the head of hospitals and asylums, or others having a large experience, will prove a most valuable aid in the study of the prevalence and ravages of these modern scourges. Raymond's experience has been that alcohol was the principal etiologic factor in two-thirds of 2,000 various nervous or mental affections under his observation last year, and Fernet's percentage at the Beaujon was the same, both for men and for women.

A Congress to Discuss Measures to Restrict the Illegal Practice of Medicine.—The French for some time have been organizing an anti-quackery congress. It has been postponed from time to time, as has been mentioned in these columns, but the date is now definitely settled for April 30 to May 3, 1906, at Paris. The official title of the congress is "Congrès pour la Repression de l'Exercice Illégal de la Médicine." A number of prominent physicians and lawyers are collecting material for communications, twenty-five subjects having been appointed on the order of the day. These include: 1, Illegal practice by bonesetters and empirics dealing in magic; 2, by quacks, magnetizers and hypnotics; 3, by lay or clerical persons under pretext of charity; 4, by members of societies for aid of the sick or wounded; 5, by nurses or attendants on the sick. Massage is the sixth subject; what it is, its dangers, and what schools of massage now are and what they should be. Mesnard of Paris will deliver the address on this subject. The seventh is the illegal practice of medicine by chiropodists, manicurists, hair-dressers and barbers. It will be presented by a physician and a pharmacist. Subject 8 is the practice of medicine by druggists. Then follow illegal practice by opticians, by medical electricians, by dentists, by midwives, by medical students, and by foreign physicians. The misleading effect of the title of doctor assumed by pharmacists, health officers and others will be discussed. Dr. Sentourens will present the subject of the co-operation of physicians in fake establishments or money-making schemes, "covering" as it is called abroad, sheltering the scheme or the quack under the medical diploma. The rôle of the press in regard to the illegal practice of medicine will be discussed by two lawyers, as also the subject of the pseudo-scientific articles written by unqualified persons on medico-pharmaceutical subjects for advertising purposes. Professor Folet of Lille will discuss the illegal and charlatanesque practice of medicine by advertising, and Dr. Leredde of Paris will speak on the means of warning the public in regard to the dangers of the illegal practice of medicine. Bardet will discuss the psychology and the economic aspect of the causes leading to the illegal practice of medicine. Two prominent lawyers will discuss the French laws affecting the practice of medicine and their inadequacies in many points, with suggestions for improvement. The powers and action of various medical organizations will be discussed by Dr. Maxwell, a medicolegal expert. The creation of a central office for the campaign against irregulars of all kinds will be suggested and urged by Dr. Ch. Levassort, 2 Place des Vosges, Paris, who is the general secretary of the congress, to whom all communications should be sent. The membership fee for the congress is 20 francs ($4). Communications for the congress in foreign languages must be accompanied by a summary in French. It is proposed to appoint a permanent committee at the close of the congress which will strive to have the various resolutions that may be passed by the congress carried into practical realization. Brouardel will preside at the congress, but Duchesne is chairman of the committee of organization.

Compilation of Cancer Statistics.—The best wording for collective inquiry circulars to be sent to physicians for cancer statistics is being earnestly discussed in Germany. The circular issued by the Berlin headquarters of the Prussian cancer research society is not accepted by the Wurtemburg committee. The points that should be brought out in the statistics, the latter committee states, are age, sex, standing of the family, race, nationality, occupation, social position, income, number of births, heredity, relation to other affections, constitution, contact with cancer subjects in the closest and widest sense, conditions of house and soil, geographical and chronological differences, city and country, localization, differentiation from other tumors and duration of the affection. The mortality figure must be the basis of the percentage. This figure is derived from the proportion of the dead to the corresponding living. This proportion is the only one of any value for statistical purposes. City and country should be listed under separate headings. The "age structure" (*Altersaufbau*) of the living should always be borne in mind, and any neglect of the living totalities and of the age structure is certain to entail error. The average age at death varies with the age structure of the living, and is totally unadapted for purposes of comparison. The mortality figure can be compared only with like figures. The living and the dead must be counted on the same plan. Clinical statistics are too apt to be a collection of "interesting cases," and to be restricted to certain classes of society. Collective inquiries are liable to result in a mere collection of such clinical statistics, owing to the lack of participation by all physicians. In such case they are merely a mass of casuistics, of no value for statistical purposes. Mammary cancer and uterine cancer should be classed separate from those of other localization. Sarcomata can not be effectually separated from carcinoma in the death certificates. Geographical distribution of cancer is not available for statistical purposes, as the various countries differ in their methods and in the exactitude of their vital statistics. Aliens should be classed apart. Comparison between small districts with different kinds of soil is a promising field, but it requires larger material, improved methods of vital statistics in the country and also a knowledge of the age and social structure of the living. Statistics in regard to cancer houses should mention the number, age structure and social condition of all the inhabitants. It is of little purpose to determine the occupation of those dying of cancer unless the occupations of the corresponding living are known. Con-

jugal cancer should be listed on the same plan as cancer generally, especially regarding the age of the surviving consort. In regard to heredity, uterine cancer should be classed separately. When it is not possible to base comparative statistics on the years when the patients were under observation, it is recommended to compare the heredity in regard to cancer of the subject's own family and that of the consort. It does not prove anything that the parents of a cancer subject reach a higher age, as they were, on an average, 30 years old when he was conceived, and have this advantage over him of these years. Life insurance statistics mention heredity and degeneration much more frequently than it is heard of among the poorer classes, whose generations succeed each other without much medical oversight. Another source of error in compiling statistics from the life insurance books is that the parents and other members of the family are usually living at the time the applicant is examined. The study of two successive generations is the ideal research in heredity. The relations between cancer and tuberculosis should be studied on the same principles as the heredity of cancer. The municipal and state statistics should be utilized, especially those relating to dwelling houses, occupation, etc. The Swiss methods of vital statistics are held up as a model for further improvement. Much work will have to be done in the way of educating official statisticians for classification of deaths and of the living by occupations, etc. The suggestion is made that a central bureau of information be organized to which physicians making a serious study of cancer can apply, and which will warn against compilations or articles based on defective or unreliable data. The co-operation of all national and local cancer research committees is desirable. Some can devote their energies to certain aspects of the question, while others can study other phases. The Bavarian committee has called for a report on the last day of 1905 in regard to every cancer patient who has died or been dismissed from treatment during the year and not reported to the committee in previous inquiries. Dr. Kolb, Konradstrasse 9, Munich, Germany, is the secretary of the Wurttemberg cancer research committee.

LONDON LETTER.

Milk Preservatives.

The question whether or not the use of preservatives in milk is illegal is proving a most difficult one in the law courts, as conflicting evidence is given by the physicians summoned on either side. Thus a dairy company was recently charged with selling milk containing 4.8 grains of boric acid to the pint. The local health officer said that boric acid in milk is injurious to health. On the other hand, Dr. R. Hutchison, the well-known authority on foods, stated that boric acid to the extent present is not injurious to health. The case was, therefore, dismissed. In another locality an exactly opposite decision was given. A dairy farmer was charged with selling milk containing only 1½ gr. per pint. Professor Kenwood and the local health officer stated that the use of boric acid in milk even in small quantities is injurious. A fine of $8 and $20 costs were imposed. The necessity for some action of the government to settle the question of the legality of milk preservatives, the use of which has greatly increased in recent years, is pressing. The county council of Middlesex has adopted resolutions asking that the local government board and the board of agriculture and fisheries decide that the use of any preservative or coloring matter or preservative of milk offered for sale be constituted an offense under the "Sale of Food and Drugs" act.

The Crusade Against Consumption.

It is felt that in the crusade against consumption success depends on the systematic action of every county, group of counties, or great centers of population, throughout the land. Systematic action is being put in force in ten counties and in four of the largest provincial towns. The metropolitan county of Middlesex, with a population of about a million and an annual death roll of over 1,400 persons from tuberculosis, has as yet made no organized effort for the cure and prevention of the disease. An appeal for funds to found an open-air sanatorium has been made. This is signed by many influential persons, including the bishop of London, the Roman Catholic archbishop of Westminster, the chief rabbi, and Sir William Broadbent. It is intended that the sanatorium shall be placed in or near the county; that sufficient land shall be attached to it to provide employment for convalescents, and for those patients capable of doing anything; that it shall accommodate both sexes, and that the buildings shall be of the simplest and least expensive character. The patients' sleeping accommodation will be detached from the administrative blocks and so constructed that the air can have free and direct access in all states of the weather without exposing the occupants to draught or wind. It is thought that there ought not to be less than 100 beds, which would admit for treatment each year about 350 patients. The estimated cost of the land, building, furnishing, lighting, etc., is $150,000.

Aniline Black Dyeing.

As aniline black dyeing has in many instances proved injurious to health a memorandum has been issued on the subject by Dr. Whitelegge, chief inspector of factories, containing provisions for the protection of the health of those engaged in the various processes of mixing, preparing, "ageing," chroming, washing off and drying involved in the preparation of aniline black. Toxic symptoms are due mainly to inhalation, but also to absorption through the skin and to decomposition of the salts when the material is allowed to dry on the clothes. A greyish or bluish coloration of the lips with a tendency to distension of the small veins and pallor of the face are produced. In those who have worked long with aniline gastric disturbances are common. Chromic acid is also used in the process of aniline black dyeing and may cause injurious effects—ulceration of the skin, frequently commencing after an abrasion. The roots of the nails, the creases over the knuckles and the skin between the fingers are the parts most usually attacked. This ulceration may penetrate to the bone and lead to loss of the nails and to deformity of the finger joints. The danger is greatest in those employed in handling the crystals and in boiling the solution; and among these individuals perforation of the nasal septum has been observed. In some persons a papular eruption is produced on the hands, especially round the knuckles, on the palm, in the fold between the thumb and first finger and about the wrists and forearms. Constant contact with the solution causes the papules to burst, leaving a chronic ulcerated condition. The following provisions are recommended by Dr. Whitelegge: 1. Exhaust ventilation by means of ducts and hoods in connection with a fan (a) over each preparing machine; (b) at the point where dust is produced in chroming; and (c) in the process of steaming. 2. A meal room for the use of the workers. Food must not be introduced, prepared or taken elsewhere. 3. Ample washing accommodation. 4. No person to be allowed to come into contact with bichromate who has any rash or ulcer the result of his work. 5. The person weighing out the bichromate crystals or ladling out the prepared aniline liquor should be provided with and should wear rubber gloves.

Security of Tenure for Health Officers.

In the rural and smaller urban districts the health officers often are hampered in the performance of their duties by the fact that their appointment is not a permanent one, but has to be renewed at intervals varying from one to five years. If they recommend measures which prove unpopular, in consequence of expense, they endanger their reappointment. The health authorities in these districts are far from progressive and are often loath to carry out sanitary reforms, and this insecurity of tenure fosters their reluctance. It has long been thought that the remedy for this condition is the abolition of periodical re-election of health officers and making the sanction of the government necessary for their dismissal. A bill with this object was introduced into parliament during the last session by the British Medical Association. A deputation of members of the Association of the Incorporated Society of Medical Officers of Health and of the Sanitary Inspectos' Association has now waited on Mr. Gerald Balfour, the president of the local government board, in order to discuss with him the provisions of the bill which it is proposed to introduce next session in its present form, or with amendments. Mr. Balfour, while admitting that the tendency of the bill is in the right direction, said that there are objections to giving permanency of tenure to all health officers. The reform is certainly urgently required.

The Proposed Amalgamation of the London Medical Societies.

A special meeting of the Royal Medical and Chirurgical Society has been held to consider the report on the union of the medical societies (previously referred to in THE JOURNAL) as adopted at the general committee of representatives of the societies. The president, Sir R. Douglas Powell, dealt with the present position of the society and pointed out that one of its great cares was the library which had been most successfully built up during the 100 years of the society's existence. This valuable possession, therefore, should be most carefully safeguarded. A resolution in favor of the amalgamation scheme was carried. At the Clinical Society a similar resolution was adopted.

Pharmacology

The Testimonial.

The testimonial is often referred to as one of the factors that has brought about the decadence of therapeutics. In the past many testimonials to the virtues of proprietary remedies were given because the physician really believed that the drug would do just what he testified it would do. Others gave testimonials because their minds were preoccupied with sundry matters, while a persuasive representative of the "proprietor" induced them to sign a statement which they later regretfully realized was not strictly correct and which placed them in a false position. Still others signed testimonials out of pure charity. A bankrupt or health-broken physician whom they knew as a "good fellow" was endeavoring to make a living out of the manufacture or marketing of a seemingly harmless prescription under a new name. To help him they gave a testimonial, feeling that the good deed of brotherly kindness outweighed the indiscretion. Yet it often has happened that even this testimonial has in after years turned up in the possession of another at most embarrassing junctures and has been a very plague to the giver. Lastly, many physicians have given testimonials because they received a *quid pro quo*, either cash, a discount on some article of medical use, or for some other consideration. Putting it squarely, a certain proportion—not large, to be sure—of testimonials have been bought and paid for. This malign leavening of the great mass of testimonials constitutes a good reason for always refusing to give one to anything or to anybody. Only a rigid adhesion to this rule will enable one who is careful of his honor to avoid unpleasant consequences. To aid the needy widow of a reputable physician a well-known doctor some years ago gave her a testimonial regarding a certain spring water out of which she was endeavoring to make a living. A few years later the spring passed into other hands, the testimonial was found, and the new proprietors published it widely in the daily press. At a most inopportune moment this was made the basis of formal charges of unprofessional conduct by another medical man who knew nothing of the antecedent circumstances. The giving of testimonials, no matter what the circumstances, may expose the giver to unpleasant gossip among those of his fellows who are not his intimates. Sooner or later every testimonial is likely to find its way into print, and then a little circular or booklet it appears on the desk of every practicing physician in the land. Even now some men in good standing are being embarrassed by the wide circulation of a pamphlet containing their unwary commendations of a proprietary remedy. "It is highly reprehensible for physicians to give certificates attesting the efficacy of secret medicines, or other substances used therapeutically," is not by any means the least important sentence in the Principles of Ethics of the American Medical Association. The testimonial is unwise, unsafe, and the sooner it is "out of date" the better. Leave it to the "patent medicine" makers and their patrons, where it belongs.

Another Death from Kopp's Baby Friend.

In THE JOURNAL, Nov. 25, 1905, page 1678, was published a report of a case of poisoning in a child from a "patent medicine" known as "Kopp's Baby Friend." At that time we had the preparation analyzed, and the analysis showed that it contains in 100 c.c., 0.0719 gm. morphin sulphate; approximately 1/3 of a grain in one fluid ounce. A death is now reported from Baltimore from the use of this preparation. The following verdict was rendered by the coroner:

BALTIMORE, December 18.

George William Franklin Lancaster (white), aged three months and fourteen days, died December 15, at 25 Frederick avenue extended, on account of a dose of Kopp's Baby's Friend, given by his mother, while suffering with indigestion. Inquest at the Southwestern Police Station, December 18, 1905. The jury warns the public not to use "Kopp's Baby's Friend."

C. FRANK JONES, Coroner.

The state's attorney, Albert S. J. Owens, issued a statement to the public, which he closed as follows:

This case emphasizes the necessity of the refusal by the public to use any remedy not prescribed by a practicing physician, and at the same time the urgent need of a law prohibiting the sale of any patent or proprietary medicine containing any deadly drug unless the same is labeled "Poison."

The Danger of the Secret Nostrum.

It is interesting to examine the formula of "Ayer's Cherry Pectoral," which is now published by the makers. According to their statement each fluid ounce contains:

	Grains.		Grains.
Wild cherry	6	Bloodroot	2
Grindelia robusta	4	Rio Ipecac	2
White pine	4	Citric acid	2
Senega.	4	Heroin.	1/6
Terpin hydrate	4	Alcohol (minims)	60

with glycerol and syrup.

It will be noted that the principal part of the preparation is a "culling of simples," but two ingredients signify much more; they are substances of specific and marked physiologic action and of recent introduction. Ayer's Cherry Pectoral has been on sale for many years; its manufacture antedates that of terpin hydrate and heroin. It is obvious, therefore, that the composition of the remedy has been changed. In this case the change may be a beneficial one, but instances have been cited in which a particular drug has advanced in price and something cheaper has been substituted. This indicates the greatest danger of secret remedies; there being no control or publicity, there is no responsibility or guarantee of uniformity. Voltaire's dictum, "Whatever is secret must be doubtful," may be appropriately applied here. The question that will suggest itself is whether or not any other active drugs were used instead of terpin hydrate and heroin in the earlier manufacture of the preparation.—Dr. Henry Leffman, Philadelphia.

The South Carolina Journal Stands for Honest Pharmacy.

The following leading editorial appears in the *Journal of the South Carolina Medical Association*. It is self-explanatory, indicating the plain stand of that journal on the question of honesty in pharmacy:

In the September issue of *The Journal of the S. C. Med. Assoc.* appeared an endorsement of the *American Medical Journalist* which was equivalent to an attack on the policy of the American Medical Association in fighting the patent and proprietary medicine combination. The *American Medical Journalist*, which is evidently published by and in the interest of the manufacturers of proprietary medicines and nostrums, has taken full advantage of its opportunity, and has reprinted this indorsement and circulated it broadcast, making it appear that we have severed our allegiance to the righteous cause championed by the American Medical Association. It is a matter of deepest regret and mortification to the editor that the item referred to should have been allowed a space in the journal by the associate editor during the absence of the former on his summer vacation, and he wishes it clearly and distinctly understood that his policy of antagonism to nostrums and proprietary compounds has not been altered by a hair's breadth. *The Journal of the S. C. Med. Assoc.* will continue to aid in the great fight, and will always rejoice to give publicity to whatever may help to remove the scales from the eyes of the multitude of physicians who are blindly aiding and abetting the gigantic nostrum fraud which attempts to masquerade in the guise of honesty and truth. We are thoroughly in sympathy with the American Medical Association and will welcome every opportunity to render whatever assistance may be in our power.

The Editor and His Honesty.

"In a recent issue of one of the larger medical weeklies—a publication which expressed, through the correspondence of its owner and publisher, an exceeding thoughtfulness for the nostrum manufacturer and his delectable business of exploiting the physician and the patient—appeared an editorial dealing with the subject of those qualities which should be possessed by the ideal medical editor, and inferentially suggesting that very few such eminent editors are known to exist, which statement is probably correct. . . .

"The catalogue of virtues and qualifications of which the happy ideal medical editor should be possessed includes everything desirable except one—honesty. . . . Simple, homely honesty, we are beginning to be taught, is quite commonly ignored in high places. 'There exist throughout this country scores of medical journals edited by men whose lack of liter-

ary apprenticeship and editorial training is demonstrated on every page.' He might well have added that their commercial instinct, their disregard for any ethical, professional or humanitarian consideration, and their absolutely cold-blooded greed, are demonstrated with equal clearness on almost every page.

"The ideal, or, if you will, the quite competent medical editor 'must recognize that his principal duty is the ignoring of self-interest *in his reviews and criticisms*,' etc. (italics ours). Exactly. But let him not ignore his self-interest so far as the advertising pages are concerned. Let him accept money from any unscrupulous person who may wish to exploit the medical profession and delude its members into using some worthless nostrum. Let him sit dignified in the editorial chair and ignore the fact that such things as advertising pages exist, and that they not infrequently do great harm to that profession which it is his to serve and guide. It is undignified to take cognizance of such mere business details as advertising pages when learned editorials are to be written and published. It is undignified to observe that the medical profession have been made fools of, for a generation or more, by unscrupulous 'manufacturers.' . . . It is dishonest for medical journals to advertise dishonest or fraudulent articles or such things as do an injury to the public and to the medical profession. This ideal editor would do none of these things. No, indeed! Not because he would ignore self-interest, but because he would have it cultivated to the very highest degree."—*California State Journal of Medicine*, November, 1905.

Resolutions Indorsing the Fight Against Nostrums.

At its December meeting, the Omaha-Douglas County Medical Society adopted resolutions commending THE JOURNAL for its educational campaign against nostrums, indorsing the work of *Collier's Weekly* and the *Ladies' Home Journal* in exposing nostrums and the pernicious methods of advertising them, and pledging the support of the members to these periodicals.

The Montgomery County (Pa.) Medical Society, at a meeting held December 13, passed resolutions expressing appreciation of the forceful and truthful presentation of the evils of the nostrum business by THE JOURNAL, *Collier's Weekly*, *Ladies' Home Journal*, *Farm Journal*, and *Marine* (Ill.) *Telegram*, and declaring that the medical and lay press should put forth their best efforts to destroy this dangerous traffic.

Similar resolutions were passed by the Fairfield County (Ohio) Medical Society, by the Berks County (Pa.) Medical Society, and by the Newton County (Miss.) Medical Society.

CHICAGO, Dec. 22, 1905.

The Board of Trustees of the American Medical Association.

Gentlemen:—The Douglas Park Branch of the Chicago Medical Society has directed me to express its thanks to THE JOURNAL of the American Medical Association and to the Council on Pharmacy and Chemistry for the active part which THE JOURNAL is taking in the present exposé of proprietary nostrums. We also wish to assure you of our continued interest and support in this movement, and trust that it will be productive of practical results. JOSEPH L. ABT, Secretary.

At a recent meeting the Medical Society of the District of Columbia adopted resolutions condemning the advertisement and use of "patent medicines" and commending the *Ladies' Home Journal* and *Collier's Weekly* for the work they have done in exposing these preparations.

Against Antikamnia.

The Saratoga Springs Medical Society, at its meeting held November 17, adopted the following resolution:

Resolved, That we as a society discountenance absolutely the use of antikamnia and all similar preparations and use our influence against their use.

The Proprietary Association Wants Its Members to be Good.

The Proprietary Association is trying to stem the tide. At a meeting held on December 4 a resolution was adopted "advising its members not to use so much alcohol in their patent medicines," and another against the use of cocain and narcotics. Here is one resolution that is worth quoting in full:

Resolved, That this association urges on its members the most careful scrutiny of the character of their advertising and of claims for the efficacy of their various prescriptions, avoiding all over-statements.

This sounds interesting. Fancy the exploiters of peruna, liquozone, Duffy's pure malt whiskey, etc., etc., etc., avoiding all over-statements in regard to the efficacy of their preparations!

THE STRENVA VACUUM FRAUD.

Fraud Order Issued by Postoffice Against the Strenva Vacuum Treatment.

The following is a summary of the postoffice investigations and conclusions in a recent case, showing the kind of work being done by that department:

MEMORANDUM IN RE THE STRENVA COMPANY AND W. OTTIGNON, ST. LOUIS, DETROIT AND BOSTON.

WASHINGTON, D. C., Dec. 16, 1905.

To the Postmaster General:

On June 15, 1905, these parties were duly cited to appear before this office and show cause why a fraud order should not be issued against them for the alleged conduct through the mails of a scheme or device to defraud. June 27 was set as the date for the hearing. At the time designated, and also at subsequent times, to-wit.: July 27, August 15 and September 5, the company has appeared before this office through its proprietor, W. Ottignon, and attorney, Mr. Clarkson, with Knight & Brothers of McGill Building, this city. At these various hearings the company has been heard at length in its behalf, and a careful consideration has been given all the matters presented by the company.

The business of this concern consists in the selling through the mails of a so-called "vacuum appliance" for the development and cure of diseases of the male sexual organs. Purchasers are secured through advertisements inserted in newspapers throughout the country and also by circular letters mailed to various persons. Orders are sent through the mails and remittances for the appliance sent in the same manner I find, after considering carefully all of the evidence adduced in this case, that the pretenses and representations on which the device of this company is sold are false and fraudulent, and that the business of said company is a scheme or device for obtaining money through the mails by means of false and fraudulent pretenses, representations and promises.

1. It is pretended that this appliance will cure conditions in men commonly known as night emissions and daily losses, varicocele, stricture, gleet, impotency or lost manhood, inflammation of the prostate gland, prematureness, nervousness and rheumatism. It is also represented that the appliance will restore full vigor to shrunken and undeveloped organs. (See booklet of company styled "Strenva Vacuum Treatment" and other advertising literature herewith.) I find that these representations are false and fraudulent, and that in truth the use of this instrument will not cure the conditions above indicated as represented.

This device was submitted by Inspector McAfee, who investigated this case, to the St. Louis Medical Society of Missouri, which referred the matter to its committee on public health and legislation, composed of Drs. George Hondu, John Young Brown and Henry J. Scherck. These doctors examined the instrument and the literature of the company setting forth the claims made for it, and reported to their society that, in their opinion, the device was a fraud, and that it was worthless for the medicinal treatment of the conditions for which it is advertised to be a cure. The statements of these physicians are in evidence in this case.

This device, with the advertising literature of the company, was also submitted by this department to the Treasury Department for reference to the surgeon general of the Public Health and Marine Hospital Service for his opinion as to the therapeutic value of the instrument in the treatment of the conditions for which it is sold. The surgeon general states that "the apparatus and method advertised by the Strenva Company are without efficacy for the purpose intended, and that the method is not free from danger." The statement of the surgeon general is in evidence in the case.

Similar instruments sold under similar representations by the Van Best Company of Denver were submitted by the inspector in charge of that division to S. D. Van Meter, M.D., chairman of the Colorado State Board of Public Health and Legislation; secretary-treasurer of the Colorado State Board of Medical Examiners, and president of the staff and visiting surgeon of the Mercy Hospital of Denver, for an opinion as to the value of such an instrument in the treating of such conditions. Dr. Van Meter gave it as his opinion that the device is wholly a fraud and wholly worthless so far as the curing of the conditions for which it is intended to be used is concerned. Dr. Van Meter's statement is in evidence in the Van Best case. Inspector-in-Charge McKee, in his report in the Van Best case, also states that in that case Dr. J. N. Hall and Dr. H. R. McGraw, both of whom, he states, are noted physicians and surgeons of Denver, expressed the same opinion as given by Dr. Van Meter.

The Strenva Company has been given the fullest opportunities to submit evidence that this instrument will cure the conditions for which it is represented to be a cure in the booklet and other advertising literature of the company. The company has totally failed to submit satisfactory evidence, either by statements of physicians or otherwise, that this appliance will cure these conditions as pretended. I am, therefore, thoroughly satisfied from this evidence and the failure of the company to produce evidence of a satisfactory nature showing that this instrument is of value for curing these conditions, that the device is a fraud and that the pretenses and representations made by the company to promote its sale through the mails are false and fraudulent, and so find.

2. It is represented that the use of this appliance is approved by the medical profession and is indorsed and recommended by eminent scientific authorities. (See pages 5, 6 and 7 of the booklet of the company.) I find that this representation is wholly false, and that the use of this appliance is not approved nor recommended by the medical profession for the cure of conditions for which it is intended to be used by this concern.

Particular attention is in this connection directed to the indorsement printed in the company's booklet on pages 6 and 7, purporting to be the indorsement of the *American Journal of Health* of this instrument. It appears by satisfactory proof and is admitted by the company to be true that this *American Journal of Health* is not a medical journal of good standing, and that it is simply a fraudulent publication, printed to sell paid advertisements to various medical concerns doing a mail order business, and to be then used by such concerns as an indorsement of a medical publication. Mr. Ottignon's only defense to this charge when it was presented to him was that he had merely copied that statement out of the booklet of some other concern that was selling a similar device in a similar manner through the mails and which business he had purchased. Even this defense shows the fraudulency of the indorsement for the reason that, while the indorsement pretends to be the indorsement of the instrument of the Strenva Company, it is, according to Mr. Ottignon, not in relation to such instrument, but in relation to the instrument of some other company. The effect of the use of this pretended indorsement of the *American Journal of Health* on the minds of the class of people in whose hands such literature falls and who are uninformed of medical journals of standing is decidedly misleading and deceptive, and is a deliberate fraud.

The company has also failed to submit any evidence to prove that its instrument is indorsed by the medical profession, although the fullest opportunity has been given it to present such evidence. The reports of the various doctors in evidence in this case, the findings of Inspector McAfee, who investigated it, the truth regarding the *American Journal of Health*, and the failure of the company to submit any evidence on this point satisfies me beyond doubt of the falsity of this representation, and I so find.

3. It is represented that this appliance is the *only* safe, sure and permanent cure for the development of weak and shrunken organs. (See page 8 of booklet.) I find that this representation is wholly false and without foundation in truth. As a matter of fact, this instrument is not only the *only* safe and permanent cure for such conditions, but in truth will not cure them at all. The defense made by the company to this charge was that it was simply such an exaggeration of a puffing nature as is employed in business. This representation is, however, one of fact, which is wholly false.

4. On pages 19 and 20 of the booklet are printed articles under the head "Prematureness a Great Cause of Unhappiness." These articles are probably obscene in their nature, and at least are decidedly objectionable. These articles pretend to depict a diseased and abnormal condition of the male sexual system to the end that the uninformed reader may be frightened into believing that his condition is abnormal and that he is in need of this company's instrument. As a matter of fact, the conditions represented are in no ways abnormal, and their presence is not recognized by the medical profession as diseased conditions, but are recognized as conditions which are present in many, if not the majority, of men of normal health. The purpose of the company in this respect is fraudulently to cause the uninformed reader to believe his normal condition is a diseased one, and in this way induce him to purchase one of the instruments sold by this concern. I therefore find that these representations are false and fraudulent and designed to deceive.

On page 21 of this booklet appears this statement: "We sell all kinds of thin tissue rubber goods at low prices." Inspector Larmour of the Chicago Division wrote test letters to the Detroit office of this concern with reference to those pretended rubber goods, and, as a result of such test correspondence, obtained evidence showing that the rubber goods referred to are such articles intended for the prevention of conception, etc., as it is made a penal offense by section 3893 of the Revised Statutes to sell through the mails or to give information as to where the same may be obtained. The person in charge of the Detroit office was arrested by the inspector after the securing of such evidence and offered to plead guilty to the indictment, but surrounded the plea with so much mystery as to the knowledge and intent in the matter that the court would not receive the plea and ordered a plea of not guilty entered and the defendant's recognizance taken in the sum of $500 for trial at the March term of the United States Court at Detroit. Mr. Ottignon stated that since the arrest of Mr. Belknap the paragraph on which he was arrested and indicted had been stricken out of the pamphlet. This fact is given as significant of the intent with which these parties have been using the mails and conducting this scheme.

This case was investigated at St. Louis by Postoffice Inspector R. W. McAfee. Mr. McAfee's report is in the case. Mr. McAfee reports that as the result of his investigation of this scheme he was satisfied that the business of the Strenva Company is fraudulent within the meaning of the postal laws.

I find, after giving this matter the most thorough consideration, and examining with care all the evidence submitted, and relying on the findings of the inspector who investigated this case and the statements of the Medical Society of St. Louis, the surgeon general of the United States, Dr. Van Meter and the other physicians of Denver, and the failure of the company to submit evidence in its behalf of the truth of its representations, that the pretenses and representations made to sell this device are false and fraudulent and that the business of the Strenva Company is a scheme devised for obtaining money through the mails on false and fraudulent pretenses, representations and promises. Not only is the device worthless for the purpose for which it is intended to be used, but its use is also attended with danger to the persons using it. I therefore concur in the recommendation of the inspector that a fraud order be issued against this company, its officers and agents as such, and W. Ottignon, at the company's offices from which the business is operated.

R. P. GOODWIN,
Assistant Attorney General for the Postoffice Department.

As a result of the above report, a fraud order was issued by Postmaster General Cortelyou Dec. 19, 1905.

Correspondence

The Detail Man and the Thoughtless Physician.

TOLEDO, OHIO, Dec. 28, 1905.

To the Editor:—Recently the representative of a wholesale drug house was in my office. The man is, I think, a truthful man. Two years ago he had with him a powder, which he said had been tested by competent physicians and had proved itself an almost unfailing cure for cancer.

About a year later he had with him some tablets which he said were a compound, of which the original powder was the base, and that extensive and scientific tests had proved the tablets to be a sure cure for tuberculosis. He showed a formula with each of these articles, but what they were made of, of course, does not matter. The matter for wonder is that a man with such a layout could make a living soliciting among physicians.

Knowing the man and believing him to be honest, I believe him when he says that he sells large orders of the powder and many thousands of the tablets. I believe him, too, when he says that his house has scores of testimonials from physicians substantiating the claims which his house authorizes him to make for their products.

The man knew nothing about the action of medicines, but from association with the physicians to whom he sold the articles, backed up by the faith which the testimonials on file in the home office gave him, he had come to look on the treatment of tuberculosis as merely the getting of a man outside of a specified number of those tablets every twenty-four hours. He had, in fact, supplied several people with samples, and he thought they were showing marked improvement.

It is very encouraging to note among the men who come around with samples that they do not seem so surprised as

formerly, when the samples are declined; the fact arguing, I think, that physicians generally are doing more thinking along the lines of physiologic action of medicines.

I have myself been a "crank of the crankiest" on the subject of the "proprietaries," and as I have criticised THE JOURNAL much, it seems only fair that I should add my mite to the great praise it is receiving for the work it is doing in making plain the distinction between intelligent treatment of disease and the handing out of ready-made treatments.

J. L. TRACY.

Governor Indorses Dr. Souchon.

NEW ORLEANS, Dec. 23, 1905.

To the Editor:—I enclose a copy of the letter written me by Governor Blanchard of Louisiana in connection with his acceptance of my resignation. The letter speaks for itself.

EDMOND SOUCHON, M.D.

NEW ORLEANS, Dec. 23, 1905.

Dr. Edmond Souchon, City.

My Dear Doctor:—Several weeks ago you tendered to me as governor of the state your resignation, both as president and member of the State Board of Health.

This action on your part, as also that of the other members of the state board was, I am sure, prompted by a desire on your part to avoid all difficulty in the way of a reorganization of the board, and thereby to remove certain embarrassments of the state administration that had grown up out of unfortunate conditions that had arisen.

In accepting your resignation permit me to assure you that I do not share in the belief that you or your board aided or assisted in the suppression and keeping from the public the knowledge of the fact that yellow fever existed in the city of New Orleans during the last summer.

Your long and successful service in the State Board of Health entitles you to the highest respect and consideration at the hands of the people of the state of Louisiana, and, on their behalf, as governor of the state, I tender you thanks, and wish you a prosperous future.

With high esteem, I remain, most sincerely yours,

NEWTON C. BLANCHARD.

Addiction of Physicians to Morphin and Liquor.

READING, MASS., Dec. 26, 1905.

To the Editor:—In THE JOURNAL, Dec. 23, 1905, in the discussion of Dr. Pressey's paper, page 1944, a statement is made by Dr. Crothers so extreme that it seems to me worthy of some adverse comment in addition to that which it received from the members who criticised it on the spot. He says that from some studies which he made five years ago and which have since been fully confirmed, he is "convinced that at least from 15 to 20 per cent. of physicians in active practice are victims of morphia and spirit taking." And again: "A general study of the habits of physicians in four of the largest cities of the country showed that from 10 to 15 per cent. were drug and spirit takers. In one city a prominent daily paper made inquiries and concluded that at least 15 per cent. of all persons practicing medicine, including all members of all the schools, were spirit and drug takers. In other cities the percentage has been estimated as high as 20. In one city over 11 per cent. of all physicians were known or reputed to be using drugs."

I have no doubt it would be generally admitted that, for very obvious reasons, it is the brain-working classes, professional men and persons of the nervous temperament who are most likely to yield to the temptations of morphin and among them physicians, having in addition a greater knowledge of and familiarity with the drug, are probably most frequently addicted. It is easy to see how a drug which gives prompt relief from distress, the immediate effects of which are obvious to outside observers not as narcotism, but as full mental vigor, which enables a man to keep about his business for a long time undetected, should only too often be resorted to in some emergency by the practitioner to prevent his business from being neglected and broken up.

A physician of the highest moral character, deservedly distinguished among his brethren and beloved by his patients, once told me that he used to remonstrate with a certain lady addicted to morphin and to alcohol on the folly of her course, and pointed out to her its dangers and wickedness, "and," said he, "the only way I could get strength to go to see her was to take it myself."

Few of us but have seen promising and successful men among our confrères prematurely lost to themselves and to the world from this drug, but notwithstanding my full share of such experience I have no doubt that Dr. Crothers' figures are very greatly exaggerated, certainly as regards morphin. If, however, we accept his additions of "spirits" and "drugs," the question becomes one of definition instead of statistics. It seems almost ludicrous, in these times of absurd statements from doubtless well meaning but unbalanced ultraists in the temperance reform, that any one should take seriously any estimate of what physicians in any city were "reputed" to be doing in the way of drugs. It depends entirely on where we draw the line, that is, on the personal views of the maker of the statistics, whether we shall find 2 or 10 or 20 per cent. of physicians who deserve to be put in the same class with morphin habitués. It is certainly doing the man who takes an occasional glass of wine or beer in a friendly way a great injustice to do so. There are probably much more than 20 per cent. of physicians who have not thought it necessary for their salvation to become total abstainers, who would be greatly surprised to hear themselves described as "victims" to spirit taking—and their friends would be quite as much so.

Although it is no doubt true that persons addicted to one drug not infrequently resort to some other, perhaps to help them out, as they vainly hope, yet the lumping together of all the persons who may use these two chief narcotics, so different not only in their mode of action, but in their noticeable effect on the character and behavior, a very small percentage perhaps so firmly bound to the one as to be almost irreclaimable without assistance and a great majority using the other as an indulgence, is wholly illogical and entirely destroys the value of even approximate statistics.

ROBERT T. EDES.

Fees for Life Insurance Examinations.

ASTORIA, ORE., Dec. 19, 1905.

To the Editor:—Referring to the short article in THE JOURNAL, December 16, page 1891, in relation to "Fees for Life Insurance Examinations," signed by J. Newton Hunsberger, permit me to say that the Clatsop County Medical Society, of Astoria, Clatsop County, Oregon, took action in this matter at its regular meeting, Oct. 5, 1905, in the adoption of the following resolution:

"*Resolved*, That, after this date, the fee for medical examination of applicants for Life Insurance, to be charged by members of the Clatsop County Medical Society shall be uniform, and in no case less than five dollars."

The companies affected by this resolution have been notified of the action and have replied in the tone stated by Dr. Hunsberger; but in this particular case they will find themselves "reckoning without their host," for every resident physician of Clatsop County is a member of the Clatsop County Medical Society, and it will hardly be practicable for the company to send an examiner with every solicitor wishing to do business here. Dr. Hunsberger is right in saying that medical societies should take the matter up, and I am sending this communication to you to point the way in which one society has already done so.

JAY TUTTLE.

Physician and the Pharmacopeia.

HILLSBORO, OHIO, Dec. 7, 1905.

To the Editor:—I am reading with pleasure and profit your special articles on the Physician and the Pharmacopeia. I think this a most excellent step in the right direction. Physicians need to be educated along therapeutic lines from the time they leave their colleges until they are dead. Therapeutics among the mass of general practitioners is the mainstay of medicine. There never was such a need as now. Every other department of medicine has made advances in the past ten or fifteen years. THE JOURNAL of the American Medical Association should be the leader and the court of last resort in matters of this kind.

J. C. LARKIN, M.D.

Miscellany

Care of the Insane in Brazil.—The October number of the *Revista Med.-Chir. do Brazil* is a special number, profusely illustrated, describing the institutions and methods of caring for the insane in Brazil. The text is in French and is from the pen of J. Chardinal, who quotes as his motto a saying of Prof. J. Moreira, the present director of the national insane asylum: "The civilization of a people is judged by the way it cares for its insane. The national asylum for the insane was founded at Rio de Janeiro in 1852. It is said to be a model institution, and had 1,591 inmates during 1904. Various diagrams are given to show the different forms of mental diseases observed, the causes of death, etc. A number of the states have special insane asylums, S. Paolo's dating from 1852.

The Effect of the X-Rays on the Blood.—E. Bibergeil, Berlin (*Wiener klin. Therap. Wchnft.*, No. 22), has sought to determine whether the action of the *x*-rays in reducing the number of the leucocytes is exercised directly on the blood elements or on the blood-forming organs. Following the method used by Rosin and himself, based on the fact that the quickness of the action of toxic coloring substances on the blood depends on the resistance of the blood cells, as well as the toxic power of the agent, he took two samples of blood from a healthy individual and submitted them both to the action of a concentrated watery solution of toluidin blue. One of these samples was submitted to the rays, the other not, but no difference as regards the quickness of the color reaction was observed. The same result followed the use of blood from a patient suffering from a blood disease, the rays appeared to have no influence whatever on the coloration or the blood cells. Hence, he considers the view of Heineke that the changes observed in the circulating blood are due, not to a lesion of the blood itself, but to one of the blood-forming organs.

The Eye Symptoms of General Paresis.—A. Joffroy (*Archives de Neurologie*, 1904), has examined the eye conditions in 227 paretics and found anomalies in 212. He considers this figure too small, as some of the cases were examined only once, and he thinks they are liable to appear later in the 15 in whom he failed to observe them. In 144 there was pupillary inequality, complete double mydriasis and extreme double myosis in 29 cases. Very frequently the pupillary orifice does not retain its normal form. In the last 125 examined this was observed 93 times in both pupils and 8 times in only one. He thinks this is, to some extent, a precursor or equivalent of Argyll-Robertson pupil. Of the two reflexes, luminous and accommodative, the former is by far most frequently affected. Its loss with the persistence of the accommodation constitutes the well-known Argyll-Robertson sign. The luminous reflex was found impaired or abolished 171 times in the 227 cases. It was lost on both sides in 103, lost on one side and weakened on the other 14 times, weakened on both sides 35 times, lost on one side and normal on the other 9 times. weakened on one side and normal on the other 10 times. The progressive weakness of this luminous reflex is generally the rule, and the Argyll-Robertson pupil once established is generally permanent, except perhaps during remissions. The accommodation reflex was found impaired or lost only 56 times. It was lost on both sides in 17, weakened on both sides in 13, lost on one side and weakened on the other in 5, lost on one side and normal in the other in 8. In only 2 cases did he find it impaired with normal luminous reflex, and it often remains normal even at a late stage of the disease. The external muscles of the eyes were affected in 38 cases. In 12 there was a simple ptosis, in 14 there were paralyses or pareses of the other muscles innervated by the third pair of nerves. In 5 there was paralysis of the fourth pair, nystagmus in 5, and in 2 spasmodic contraction of the orbicularis. In only 27 of the 227 were alterations of the fundus observed, papillary atrophy in 22, chorioretinitis (specific) in 2, old iridochoroiditis in 1, and traces of old optic neuritis in 2. The optic symptoms in paresis he considers of themselves insufficient for diagnosis. His figures are decidedly in contrast as regards fundus conditions with those reported by M. M. Kereval and Dangean (61 per cent. of cases) in the *Archives de Neurologie* in March, 1904.

Marriages

L. L. FLOYD, M.D., to Miss Rosie F. Norman, at Baltimore, December 19.

J. T. MCINTYRE, M.D., to Miss Magilee Pile, at Bristol, Va., December 20.

WILLIAM N. SENN, M.D., to Miss Marjorie L. Lynch, both of Chicago, January 3.

EDWARD B. CLAXTON, M.D., to Miss Irene Robertson, at Nanticoke, Md., December 27.

WILLIAM R. ROGERS, M.D., to Miss Natalie Haynes, both of Bristol, Va., December 20.

JESSE L. COONTZ, M.D., to Miss Hattie Alice Still, both of Woodland, Iowa, December 24.

FREDERICK W. FOCHTMAN, M.D., to Miss Leonora Ellen May, at Cumberland, Md., December 27.

H. COLLES GRANT, M.D., Round Hill, Va., to Miss Elinor C. Rowe, at Richmond, Va., December 15.

GUY HARRISON MCFALL, M.D., Detroit, Mich., to Miss Linnie Belle Tucker of Louisville, Ky., January 3.

FLETCHER J. WRIGHT, M.D., Fork Union, Va., to Miss Clara Edna Smith, at Ridgely, Md., December 27.

EDWARD W. ROWE, M.D., Wood River, Neb., to Miss Sarah Belle Harper of Randolph, Neb., December 14.

B. CURTIS MILLER, M.D., Cumberland, Md., to Mrs. Cornelia G. Finley, at Washington, D. C., December 23.

GEORGE INGLIS MCLEOD, M.D., Ardmore, Pa., to Miss Margaret G. Twiggs of Augusta, Ga., December 27.

E. GUY HOPKINS, M.D., Richmond, Va., to Miss Pauline Dudly Gary, at Fredericksburg, Va., December 27.

FRANZ CARL WALDECKER, M.D., Wichita, Kan., to Miss Dora Louisa Bergmann, at Rockville, Md., December 27.

THOMAS MONROE JONES, M.D., Anderson, Ind., to Miss Elizabeth Shields Baker, at Winchester, Va., December 27.

CHARLES WILBUR HOFFMAN, M.D., Henry, W. Va., to Miss Agnes Hamilton Boyd, at Lanaconing, Md., December 25.

Deaths

Charles C. Chittenden, D.D.S. Ohio College of Dental Surgery, 1866; a member of the American Medical Association; president of the Wisconsin State Board of Dental Examiners since its creation in 1885; president of the National Dental Association in 1904; some-time president of the Madison Odontological Society; a veteran of the Civil War; a practitioner of rare ability, died at his home in Madison, December 15, after an illness of several months, aged 63.

George I. McLeod, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia; formerly a resident of the Philadelphia Hospital and surgeon in the federal army during the Civil War, but since 1893 secretary of the state lunacy commission, and at one time a member of the State Board of Charity, died in the Bryn Mawr Hospital, December 18, from pneumonia, aged 68.

Ezra Herbert Wilson, M.D. College of Physicians and Surgeons in the City of New York, 1882; fellow of the Royal Microscopical Society of London; member of the Kings County Medical Society, Brooklyn Pathological Society and the Associated Physicians of Long Island, died at his home in Brooklyn, December 20, aged 48.

Oliver A. Blumenthal, M.D. Syracuse (N. Y.) University College of Medicine, 1893, of Syracuse; member of the National Society for the Prevention of Tuberculosis, Onondaga County Medical Society, and Syracuse Academy of Medicine, died from tuberculosis at Saranac Lake, N. Y., December 21, aged 35.

Edward Drew Phillips, M.D. Medical College of Virginia, Richmond, 1850; a Confederate veteran; for more than half a century a practitioner of Suffolk, Va., died at his home in that city from malignant disease of the throat, after a long illness, aged 74.

David Oldham Lewis, M.D., medical director U. S. Navy, fleet surgeon of the Pacific squadron, died at Honolulu, Hawaii, December 16 from cerebral hemorrhage, aged 54.

Norman B. Sherman, M.D. Albany (N. Y.) Medical College, 1861, died suddenly at his home in Marshall, Mich., from cerebral hemorrhage, aged 63.

John M. Rand, M.D. Dartmouth Medical School, Hanover, N. H., 1859; surgeon of the Twenty-fifth Army Corps in the Civil War; one of the founders and chief surgeons of the Women's and Children's Hospital, Newark, N. J., died at his home in that city, December 19, aged 72.

John H. Sanborn, M.D. Dartmouth Medical School, Hanover, N. H., 1857, surgeon of the Twelfth New Hampshire Volunteer Infantry during the Civil War, died at his home in Franklin Falls, N. H., December 18, from cerebral hemorrhage, after an illness of one month, aged 75.

John Jabez Caldwell, M.D. New York Medical College, New York City, 1859; assistant surgeon during the Civil War; some-time health officer of Brooklyn, and of Baltimore; member of many scientific societies, died at his home in Summit, N. J., December 18, aged 69.

Walter W. Naylor, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1889, a member of the Philadelphia Medical Emergency Corps and police surgeon in the second police district, died at his home in Philadelphia, December 16.

Charles Eppes, M.D. Vanderbilt University Medical Department, Nashville, Tenn., 1882, died December 26, after a year's illness with chronic nephritis, at Tazewell, Tenn., aged 51.

John R. Crapo, M.D. Medical College of Ohio, Cincinnati, 1877, a member of the American Medical Association, died at his home in Terre Haute, Ind.. December 19, aged 55.

William C. Armstrong, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1880, died at his home in Wayne, Pa., December 20.

Queries and Minor Notes

HAS TETANUS FOLLOWED QUININ OR MORPHIN HYPODERMICS?

DR. H. D. PHELAN, San Francisco, calls the attention of Dr. McCampbell (whose inquiry on the above subject appeared in THE JOURNAL, Dec. 9, 1905, page 1817) to the report of investigations by Dr. G. Vincent, in the *Annales de l'Institut Pasteur*. An abstract of this appeared in THE JOURNAL, May 20, 1905, page 1646. Tetanus has been frequently reported following hypodermic injections of quinin, while it seems never to have been reported following the injection of either cocain, caffein, ergotin or ether. Dr. Phelan referred to this in the *California Medical Bulletin* and remarked that in spite of thousands of injections of quinin for malaria in the military hospitals, cases of tetanus do not seem to have been reported from the use of quinin hypodermics.

FORMULARIES.

NORWICH, CONN., ——, 1905.

To the Editor:—Can you recommend a good formulary—one containing only good prescriptions, rather than a conglomeration of all kinds? CHARLES F. WHITNEY, M.D.

ANSWER.—Pocket formulary of Dr. J. Quin Thornton, published by Lea Brothers & Co., Philadelphia, price $1.50 net; Saunders Pocket Formulary published by W. B. Saunders & Co., Philadelphia, price $2.00 net; National Formulary, published by American Pharmaceutical Association, price $1.00. There are many books of formulary on the market, but the above will be found as satisfactory as any.

State Boards of Registration

COMING EXAMINATIONS.

ARKANSAS MEDICAL Board, Little Rock, January 9. Secretary, J. P. Runyan, Little Rock.

NEW HAMPSHIRE State Board of Medical Examiners, State House, Concord, January 9-10. Secretary, H. C. Morrison, Concord.

VERMONT State Board of Medical Registration, Burlington, January 9-11. Secretary, W. S. Nav. Underhill.

WISCONSIN Board of Medical Examiners, Pfister Hotel, Milwaukee, January 9-11. Secretary J. V. Stevens, Jefferson.

SOUTH DAKOTA Board of Medical Examiners, Sioux Falls, January 10-11. Secretary, H. E. McNutt, Aberdeen.

DISTRICT OF COLUMBIA Board of Medical Supervisors, Washington, January 11. Secretary, W. C. Woodward, Washington.

ILLINOIS State Board of Health, Great Northern Hotel, Chicago, January 18-20. Secretary, J. A. Egan, Springfield.

NEW YORK State Boards of Medical Examiners, Albany, January 30-February 2. Secretary, Charles F. Wheelock, Albany.

Connecticut November Report.—Dr. Charles A. Tuttle, secretary of the Connecticut Medical Examining Board, reports the written examination held at New Haven, November 14-15. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number examined was 29, of whom 22 passed and 7 failed. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
University of Vermont	(1898)	81.7
Women's Med. Coll., Baltimore	(1888)	76.8
Baltimore Med. Coll.	(1904)	77.8
Medical Coll. of Virginia	(1903)	75.1
College of P. and S., New York	(1900) 83.1; (1901)	78
University of Pennsylvania	(1903) 86.4; (1904) 84.1; (1905) 81.4.	
Georgetown University	(1904)	79.6, 80.2
Jefferson Med. Coll.	(1889)	83.3
Johns Hopkins Univ.	(1904)	80.1
McGill University	(1903)	86
Yale, (1903) 75.3; (1904) 81, 84.2; (1905) 82.1, 83, 83.6,		83.8
Harvard	(1901)	75.2
Women's Medical College, Philadelphia	(1904)	82.3
FAILED.		
Maryland Med. Coll.	(1904) 69.2; (1905)	68.6
Tufts Med. Coll.	(1905)	70.2
University of the South	(1905)	70.5
Baltimore University	(1900)	62
Georgetown University	(1904) 73.8; (1905)	64.3

District of Columbia October Report.—Dr. William C. Woodward, secretary of the Board of Medical Supervisors of the District of Columbia, reports the written examination held at Washington, D. C., October 1905. The number of subjects examined in was 17; total number of questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 25, of whom 18 passed and 7 failed. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
Albany Medical College	(1902)	*84.9
Baltimore Medical College	(1905)	86
Medical Coll. of Virginia	(1899)	80.9
George Washington Univ.	(1905) 75.4, 81.3,	85.2
Howard University	(1904)	82.8
University of Pennsylvania	(1904)	90.9
Georgetown University, (1904) 81.4, 84.5; (1905) 82.1, 82.3,		90.2
Johns Hopkins University	(1901)	84.7
Columbian University	(1904) 81.9,	89.7
University of Virginia	(1902) 82.7; (1904)	79.6
Hahnemann Med. Coll., Philadelphia	(1901)	86.5
FAILED.		
Howard University	(1905)	74.5
George Washington University	(1905) 54.4,	68.9
University of Michigan	(1887)	72.1
Southern Homeo. Med. Coll.	(1904)	71
New York Homeo. Med. Coll.	(1886)	69.5
West Pennsylvania Med. Coll.	(1892)	54.1

* This candidate passed the July, 1904, examination, but license was not issued until November, 1905.

Indiana October Report.—Dr. W. T. Gott, secretary of the Indiana Board of Medical Registration and Examination, reports the written examination held at Indianapolis, Oct. 3-5, 1905. The number of subjects examined in was 16; total number of questions asked, 100; percentage required to pass, 750 points out of possible 1,000. The number of candidates examined was 108, including 13 osteopaths. Of this number 92 passed and 16 failed. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
Northwestern University	(1905) 88.4, 89.2, 89.8,	91.2
University of Kentucky	(1900) 79.1, 83.4, 85.2, 87.1, 89.1,	92.7
Eclectic Med. Inst., Cincinnati,	(1905) 82.9, 84.6, 87.2,	89.9
Rush Med. Coll. (1892) 90.9; (1903) 90.1; (1904) 86.4; (1905) 86.4, 87.8, 90.5, 93.3.		
Detroit College of Medicine	(1905)	79.7
Barnes Med. Coll.	(1905)	83.7
Miami Med. Coll.	(1904) 84.9; (1905)	85.4
Illinois Med. Coll.	(1905) 87.7, 88, 88.9,	90
University of Louisville	(1898) 88.1; (1905)	83
Hospital College of Medicine	(1905) 80.8,	82.2
College of P. and S., Chicago	(1905) 80.9, 82.9, 86.4,	89.8
Tennessee Med. Coll.	(1899)	79.4
Pulte Med. Coll.	(1897)	83.4
Physio-Medical College, Indianapolis	(1905) 85, 85.1,	86.3
Keokuk Med. Coll.	(1905)	83
Med. Coll. of Indiana, (1901) 84.7; (1905) 75.7, 76.7, 78, 79.5, 80.3, 81.2, 81.3, 83.6, 83.9, 84.7, 86.7.		
College of P. and S., New York	(1902)	92
American College of Med. and Surg.	(1905) 81.3,	84.3
University of Iowa	(1903)	89.5
Baltimore Med. Coll.	(1903)	93
Columbian University	(1905)	90.5
College of P. and S., Keokuk	(1902)	82
Eclectic Med. Coll. of Indiana	(1905)	77.2
Kentucky School of Medicine	(1905) 75.3, 84.1,	86.5
Central College of P. and S., Indianapolis	(1905) 78.9,	84
National Med. Univ., Chicago	(1905)	92.1
Starling Med. Coll.	(1905)	87.2
University of Michigan	(1905)	93.8
Hahnemann Med. Coll. and Hosp., Chicago. (1904) 80.6; (1905) 88.3.		
Louisville Med. Coll.	(1905) 79.9,	83.1
Jefferson Med. Coll.	(1905)	86.1
Ft. Wayne College of Med.	(1905)	88.9
Washington University	(1905)	87.7
Med. Coll. State of South Carolina	(1905)	81.2

FAILED.

Hahnemann Med. Coll. and Hospital, Chicago	(1905)	73.9
Med. Coll. of Indiana	(1904) 67.1; (1905)	71.1
Illinois Med. Coll.	(1905)	52.7
Ft. Wayne Coll. of Medicine	(1905)	66.6
Southwestern Homeo. Med. Coll., Louisville,	(1903) 73.3; (1905) 68.8.	
Marion-Sims Beaumont Med. Coll.	(1905)	72.5
Cleveland Homeo. Med. Coll.	(1894)	66.9

Kentucky October Report.—Dr. J. N. McCormack, secretary of the State Board of Health of Kentucky, reports the written examination held at Louisville, Oct. 25, 1905. The number of subjects examined in was 14; total number of questions asked, 120; percentage required to pass, 70, and not less than 60 in any one branch. The total number of candidates examined was 23, of whom 22 passed and 1 failed. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
Med. Coll. of South Carolina	(1903)	91
University of Baltimore	(1905)	89
College of P. and S., Atlanta	(1905)	89
Hahnemann Med. Coll., Chicago	(1903)	87.5
Vanderbilt University	(1880) 75; (1905)	86
St. Louis University	(1904)	85
Georgetown University	(1880)	84
Kentucky School of Medicine	(1897) 78; (1905)	84
Illinois Med. Coll.	(1905)	84
Hospital College of Medicine	(1905) 70, 77,	80
Columbia University	(1904)	79
Central College of P. and S., Indianapolis	(1905)	78.5
Medical College of Ohio	(1905)	78
University of Tennessee	(1905) *70,	77
University of Louisville	(1905)	76
Eclectic Medical Institute, Cincinnati	(1905)	73
Memphis Hospital Med. Coll.	(1903)	70
FAILED.		
Barnes Med. Coll.	(1905)	67

* Failed at April examination.

Massachusetts November Examination.—One hundred and eleven applicants took the examination of the Massachusetts Board of Registration in Medicine in November; of this number 57 passed and have received certificates of registration.

Michigan October Report.—Dr. B. D. Harison, secretary of the Michigan State Board of Registration, reports the written examination held at Lansing, October 10-13, 1905. The number of subjects examined in was 19; total number of questions asked, 95; percentage required to pass, 75. The total number of candidates examined was 19, of whom 15 passed and 4 failed. The following colleges were represented:

PASSED College.	Year. Grad.	Per Cent.
Laval University	(1903)	76.3
Kentucky School of Medicine	(1905)	75.1
Detroit College of Medicine	(1905) 76.1,	83.4
College of P. & S., Baltimore	(1905)	83.2
Woman's Medical College of Pennsylvania	(1905)	82.4
George Washington University	(1905)	79.1
Northwestern University	(1905)	79.1
Rush Medical College	(1905) 78.7,	82.1
College of P. & S., Chicago	(1903)	76.7
Jefferson Medical College, Philadelphia	(1904)	80.6
University of Bellevue Hospital Medical College	(1905)	81.
Hahnemann Medical Coll. & Hosp., Chicago	(1905)	80.5
Georgetown University	(1905)	88.8
FAILED.		
Miami Medical College	(1895)	71.9
Kentucky School of Medicine	(1905)	71.3
Meharry Medical College	(1905)	62.4
College of Med. & Surg., Detroit	(1899)	74.6

North Dakota October Report.—Dr. H. M. Wheeler, secretary of the North Dakota State Medical Examining Board, reports the written examination held at Grand Forks, N. D., October, 1905. The number of subjects examined in was 14; percentage required to pass, 75. The total number of candidates examined was 28, of whom 27 passed and 1 failed. The following colleges were represented:

PASSED College.	Year. Grad.	Per Cent.
Trinity University	(1896) 80, (1899)	79.
Vienna	(1897)	83.
Northwestern University	(1899) 77. (1905)	86. 90.
College of P. S., Chicago	(1905)	79, 80, 80
McGill University	(1905)	82.
Hamline University	(1903) 88. (1904)	75.
University of Minnesota	(1897) 85. (1904) 84. (1905)	82.
University of Christiania	(1893) 81. (1895) 75. (1903)	85.
American Coll. of Med. & Surg., Chicago	(1904)	90.
Rush Medical College	(1902) 90. (1903) 82. (1905)	87. 88.
Toronto University	(1905)	80. 83.
Bennett Medical College, Chicago	(1897)	78
College of P. & S., Milwaukee	(1902)	76.
FAILED.		
Barnes Medical College	(1905)	....

Texas October Report.—Dr. T. T. Jackson, secretary of the Board of Medical Examiners for the State of Texas, reports the written examination held at San Antonio, Texas, Oct. 17-19, 1905. The number of subjects examined in was 12; total number of questions asked, 150; percentage required to pass, 75. The total number examined was 37; 23 passed and 14 failed. Two candidates applied for license to practice obstetrics; one passed the examination, the other failed. The following colleges were represented:

PASSED College.	Year. Grad.	Per Cent.
University of Texas,	(1905) 81.3, 84, 86.7; (nongraduate), 82.4, 84.9	
McGill University	(1894)	85.9
University of Fort Wayne	(nongraduate)	79.2
Washington University	(1904) 82.5,	81.6
Northwestern University	(1904)	79.2
University of Michigan	(1902)	85.
College of P. & S., New York	(1904)	78.6
University of Pennsylvania	(1895)	80.4
University of Kentucky	(1905)	75.
University of Louisville	(1905) 75.	78.
University of Virginia	(1905)	78.7
Jefferson Medical College	(1905)	91.1
Hospital College of Medicine, Louisville	(1899)	84.3
Tulane University	(1905)	81.
American Medical Missionary College, Chicago	(1901)	80.4
College not stated, one candidate	(1905)	81.5
FAILED.		
Hospital Coll. of Med., Louisville	(1892) 56.2; (1904)	69.9
Louisville Medical College	(1905)	72.
Tulane University	(1904)	65.4
Howard University, Washington, D. C.	(1898)	73.7
Medical College of Ohio	(1899)	72.1
University of the South	(1905)	66.3
Illinois Medical College	(1903)	55.
Chattanooga Medical College	(1905)	63.1
Herring Medical College	(1900)	46.7
College and year not stated, four candidates	72, 64, 48, 14	

Utah October Report.—Dr. R. W. Fisher, secretary of the Utah State Board of Medical Examiners, reports the examination held at Salt Lake City, Oct. 2, 1905. The total number of candidates examined was 10, of whom 9 passed and 1 failed. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
Northwestern University	(1905)	75
Hospital College of Medicine, Louisville	(1905)	75
College of P. and S., Baltimore	(1896)	78
University of Michigan	(1904)	80
St. Louis University	(1905) 77,	80
College of P. and S., Chicago	(1905)	84
Bennett Med. Coll.	(1905)	77
Harvard University	(1898)	77
FAILED.		
University of Iowa	Grade not given.	

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending Dec. 30, 1905:

Dean, E. A., asst.-surgeon, granted three months' leave of absence.

Church, James R., asst.-surgeon, ordered to repair to Washington, D. C., and report in person to the Secretary of War for temporary duty, and on completion thereof will return to Fort Robinson, Neb.

Carroll, James, asst.-surgeon, left Washington, D. C., en route to New Orleans, La., to attend meeting of American Association for the Advancement of Science.

Pinquard, Joseph, contract surgeon, arrived at San Francisco from the Philippines Division, and has been ordered to Fort Leavenworth, Kans., for duty.

Wolven, F. Homer, dental surgeon, left Fort McKinley, Me., on leave of absence for fifteen days.

Waddell, Ralph W., dental surgeon, arrived at Fort Mackenzie, Wyo., for duty.

Wing, Franklin F., dental surgeon, left Jefferson Barracks, Mo., and arrived at Fort Riley, Kans., for duty.

Ware, William H., dental surgeon, left Fort Logan, Colo., on leave of absence for two months.

Hallwood, James B., contract surgeon, relieved from duty at Fort Leavenworth, Kans., and ordered to Washington, D. C., for annulment of contract.

Kennedy, James S., contract surgeon, left Fort Omaha, Neb., on leave of absence for fourteen days.

Lowe, Thomas S., contract surgeon, reported at San Francisco, from leave of absence for transportation to the Philippines Division.

Leeper, John F., contract surgeon, left San Francisco, on leave of absence for two months from the Philippines Division.

Stuckey, Harrison W., contract surgeon, left Fort Snelling, Minn., for temporary duty at Fort Assiniboine, Mont.

Dickenson, Clarence E., contract surgeon, left Fort Logan, Colo., for temporary duty at Fort Wingate, N. Mex.

Adair, George F., contract surgeon, returned from Fort Jay, N. Y., to his proper station, Fort Wadsworth, N. Y.

Brooks, John D., contract surgeon, left Fort Meade, S. D., on leave of absence for thirty days.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending December 30, 1905:

McClanahan, R. K., asst.-surgeon, having been examined by a retiring board and found incapacitated for active service on account

of disability not the result of any incident of the service, is retired from active service on furlough pay from Dec. 19, 1905, under the provisions of Section 1454, Revised Statutes.

Dorsey, B. H., asst.-surgeon, ordered to Altoona, Pa., January 2, for duty with Recruiting Party No. 4.

Judd, H. W., acting asst.-surgeon, detached from duty with Naval Recruiting Party No. 4, ordered home and granted leave until expiration of appointment as acting assistant-surgeon.

Curtis, E. E., acting asst.-surgeon, appointed acting asst.-surgeon from December 21, 1905.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending Dec. 27, 1905:

Grubbs, S. B., P. A. surgeon, granted seven days' leave of absence from Dec. 22, 1905, under Paragraph 191 of the Regulations.

Foster, M. H., P. A. surgeon, relieved from duty at San Diego, Cal., and temporary duty at Galveston, Texas, and directed to proceed to San Juan, P. R., assuming the duties of chief quarantine officer.

Francis, Edward, P. A. surgeon, granted leave of absence for one month from January 17.

Lloyd, B. J., asst.-surgeon, directed to proceed to Guayaquil, Ecuador, and relieve Acting Asst.-Surgeon Luis F. Cornejo-Gomez.

Castle, J. H., chief division of chemistry, hygienic laboratory, granted three days' leave of absence.

Gustetter, A. L., acting asst.-surgeon, excused without pay for a period of twenty-five days from December 21, 1905.

McKay, Malcolm, pharmacist, granted leave of absence from December 13 to 31, inclusive.

Walerius, Mathias, pharmacist, relieved from duty at Chicago, and directed to proceed to Memphis, Tenn., reporting to medical officer in command for duty and assignment to quarters.

Herty, F. J., pharmacist, granted seven days' leave of absence from December 18, 1905, under Paragraph 210 of the Regulations.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service during the week ended December 29, 1905:

SMALLPOX—UNITED STATES.

California: Los Angeles, Dec. 9-16, 1 case; San Francisco, 1 case.
District of Columbia: Washington, Dec. 8-23, 15 cases, 1 death.
Florida:: Jacksonville, Dec. 9-23, 6 cases.
Illinois: Galesburg, Dec. 16-23, 1 case.
Louisiana: New Orleans, Dec. 9-23, 13 cases.
Maryland: Baltimore, Dec. 16-23, 4 cases.
Michigan: Grand Rapids, Dec. 16-23, 1 case.
Missouri: St. Louis, Dec. 16-23, 2 cases.
Ohio: Cincinnati, Nov. 3-Dec. 22, 22 cases.
Utah: Five counties, Nov. 1-30, 46 cases.
Wisconsin: Appleton, Dec. 9-16, 1 case; La Crosse, Dec. 16-23, 1 case.

SMALLPOX—INSULAR.

Philippine Islands: Manila, Oct. 28-Nov. 4, 2 cases.

SMALLPOX—FOREIGN.

Brazil: Para, Nov. 1-17, 187 cases, 48 deaths; Rio de Janeiro, Nov. 19-26, 7 cases, 3 deaths.
Chile: Iquique, Nov. 11-26, 21 cases, 7 deaths.
India: Bombay, Nov. 21-28, 1 death; Calcutta, Nov. 11-18, 1 death: Madras, Dec. 18-24, 12 deaths.
Mexico: City of Mexico, Dec. 2-9, 2 cases, 2 deaths.
Russia: Odessa, Nov. 18-Dec. 2, 28 cases, 5 deaths.
Spain: Barcelona, Dec. 1-10, 6 deaths.

YELLOW FEVER—UNITED STATES.

Texas: Galveston, Dec. 24, 1 case (imported from Habana).

YELLOW FEVER—FOREIGN.

Brazil: Para, Nov. 1-17, 39 cases, 9 deaths; Rio de Janeiro, Nov. 19-26, 3 cases, 2 deaths.
Cuba: Habana, Dec. 18-24, 8 cases, 3 deaths; Matanzas Province, Dec. 22, 1 case.
Ecuador: Guayaquil, Dec. 20, epidemic.
Honduras: Puerto Cortez, Nov. 27, 2 cases, 1 death; San Pedro, 6 cases.
Mexico: Coatzacoalcos, Dec. 3-9, 1 case, 1 death; Cordoba, Dec. 3-16, 3 cases, 3 deaths; Orizaba, Dec. 9-16, 1 case; Zenopa, Dec. 3-9, 1 case, 1 death.

CHOLERA—INSULAR.

Philippines: Manila, Oct. 28-Nov. 11, 15 cases, 15 deaths.

CHOLERA—FOREIGN.

India: Calcutta, Nov. 11-18, 14 deaths; Madras, Nov. 18-24, 3 deaths.
Russia: Vistula Province, Oct. 26-Nov. 22, 32 cases, 22 deaths.

PLAGUE.

Brazil: Rio de Janeiro, Nov. 19-26, 25 cases, 9 deaths.
China: Hongkong, Oct. 28-Nov. 4, 2 cases, 1 death.
India: Bombay, Nov. 21-28, 8 deaths: Calcutta, Nov. 11-18, 17 deaths; Karachi, Nov. 19-26, 6 cases, 5 deaths.

Medical Organization

WHAT CAN THE COUNTY SOCIETY DO?

In most of the counties of the United States there is now at least a skeleton organization, and, while in many instances the society is doing good work, there are yet others that languish for the want of knowing what to do and how to do it. Local needs vary too widely to enable any one series of programs to fit the wants of all, but from time to time in this column the attempt will be made to give practical replies to the above question.

Each local society is likely to devise some original and profitable method of work, which will be outlined herein in order that others may benefit. The endeavor will be made, too, to present the subjects for discussion and forms of meeting that will be of help to the commonwealth and to the whole profession, as well as to the society itself. The keynote of medical organization is coöperation. Brief outline reports of society accomplishments will be welcomed.

I. RELATIONS TO NEWSPAPERS.

At the present time, when the exposure of the patent-medicine traffic is uncovering the method by which newspapers have been forced to oppose public health legislation, the relation of the profession to the newspapers is a topic of prime importance to every county society. In our condemnation of the press for its alliance with the worst of public frauds we must not overlook the fact that the majority of newspapers were buncoed innocently enough. They needed money, as does every other enterprise, and nothing at first aroused suspicion as to the fraudulent game in which they were led to a partnership. In North Dakota the newspapers, at great financial sacrifice, supported the well-organized profession in its successful campaign for a pure food and drug law. Dr. McCormack reports, from all along the route of his present tour, that a surprisingly large number of local newspapers are throwing off the proprietary association control and are openly and courageously supporting *Collier's*, the *Ladies' Home Journal*, etc., in their efforts to mitigate the terrible evils of the patent-medicine trade. As these papers do this at a very considerable financial cost, they deserve the hearty praise and support of the profession. One enthusiast suggests that in counties where the newspapers are small and struggling the physicians should carry ethical advertising cards in the papers to compensate the publishers for the loss of patent-medicine advertisements.

Every society should be on friendly terms with the newspaper editors in the county. Meetings should be held to which the editors are invited and at which the subjects for discussion should be patent medicines, physicians' advertising, epidemic diseases, sanitation, health officers, the prevention of disease, and topics of local health interest.

In addition to such meetings, each society should have a "Committee on Relations to the Press," whose duty it should be to keep in touch with the editors, explaining to them the profession's attitude on the various problems of mutual interest that arise. Preferably such a committee should in every possible instance include among its members the family physician of the editor. It should be made clear that these committees are not for the purpose of winning the press to the personal advantage of physicians, but purely for the good of the whole community. They should make it clear that they have no personal favors to ask of the press, but that their function is to see that the papers are enlightened on all the public relations of scientific medicine.

(To be continued.)

THE STATUS OF ORGANIZATION WORK IN CALIFORNIA.

By J. N. McCormack, M.D.

Chairman of the Committee on Organization of the American Medical Association.

BOWLING GREEN, KY.

While it is now very generally known that my work is entirely in the interest of county and state organizations and is done wholly at the expense of the American Medical Association, and although the profession everywhere has been more enthusiastic after my visits than the merits of what was done seemed to warrant, it is not so well known that I have had almost literally to beg my way into most states and that I am still kept out of others where the need for somebody to do something to arouse and help the profession is even more evident. Fortunately, I have been relieved of all embarrassment in the matter by the knowledge that the obstacles or objections are in no way personal to myself, to what I represent or to the association. Most frequently the trouble is that the

council and other state society officials labor under the delusion that their organizations are already so advanced that only the element of time is needed to make them complete. Often I am told that "You could use no argument and bring no influence to bear which we have not already exhausted, and we cannot think that the results would pay for the trouble to us and the expense to the association which would be involved." Back of all these expressed difficulties is the fact that these officials are busy practitioners who are so occupied with their own affairs that they cannot, or at least do not, give much serious thought to anything else which they can postpone or avoid. Being thus relieved of all personal embarrassment, and knowing from long experience what can be accomplished if the opportunity is given, I have just patiently, kindly and tactfully persisted in my efforts to secure the necessary co-operation and to get in, and have seldom failed to find that the work was most needed in those states where the need for it was least felt.

California is an excellent illustration of what has just been said. It was the first state to adopt the new plan of organization without advice or assistance from the outside. The increase in membership has been rapid, and societies exist in all but a few sparsely settled counties. Through its ably-edited state journal it is leading in some of the best and most fruitful reform work which is being done in this country. Its secretary and editor, Dr. Jones, in a most altruistic and unselfish way, has given up every other interest and ambition in order to devote his entire time and talents to its work. It has a fair medical law and the standard of examinations is high. The fees for medical men are higher than in almost any other state. This is far more than has been accomplished in most states, more than has been done in my own state in several lines, and a pride in it all is natural and easy to understand. Still, from a careful study of their legislative history, of the dominion and insolence of the quack interests in the state and other unmistakable symptoms, I have become convinced that their attractive-looking organization was largely on the surface, and that the unusual prosperity of their profession was not only fortuitous and insecure, but was endangered by the same influences which have operated so disastrously for years in the eastern and middle states.

When I took up the matter with Dr. Jones he insisted that their organization was complete except in a few sparsely settled outlying counties, and no impression was made when it was urged that far more good could be done, and that there was the greatest need for work in San Francisco, Los Angeles, Sacramento and other centers of population than in the country districts, and that his plans could not be considered even well under way until these centers were thoroughly infected with the modern spirit of professional co-operation. When we met at Portland, after fruitless correspondence, I was not surprised to find that we had been discussing entirely different propositions. Earnest and able worker as he was, and is, he had believed that his profession was organized as soon as a large majority of them were enrolled in the membership, with a good attendance and an interesting program at the annual meetings of the state society, and a strong journal for intercommunication and instruction. When he realized that, important and necessary as these things are as links in the complete chain proposed under the new system, they are secondary to and almost entirely dependent for real effectiveness on the county societies, and that these, meeting weekly or oftener, should and can be made live local schools for working out all of the complex problems confronting a rapidly evolving profession, including postgraduate work, practical business methods, and for educating and leading public opinion along proper lines as to the reasons for and methods of securing and enforcing medical and health legislation, he was more anxious for the work to be undertaken than I had been, and at the end of the itinerary exacted a promise that I would return next year for at least six weeks' work of the same kind.

As first arranged the itinerary included Sacramento, Oakland, Santa Rosa, San Jose, Monterey, San Louis Obispo, Los Angeles and San Diego. Later Pasadena and Long Beach were added. Dr. Jones attended all of the appointments with me except those at Santa Rosa and San Luis Obispo, and it soon developed that he had made systematic arrangements to secure the fullest possible representation at all of the meetings. At Sacramento, the first meeting, as the attendance was pretty full, and as I had the privilege of meeting many of the members in advance, opportunity was given for a careful study of local conditions. The personnel was markedly high, especially on the social side, but their county society was of the old perfunctory kind and, although at the beautiful and historic capital of the state, where the need for a live interest in public affairs and for concert of action was so great, they had never even grasped the idea of such an organization or of uniting and wielding the powerful influence of the profession in everything for the promotion of its own and public welfare. For instance, Governor Pardee, a physician, and a member of the county society since his removal to the capital, had been forced to veto an anti-vaccination bill during the last session of the General Assembly, which he believed could have been easily defeated with a little effort by the local profession. Other instances were related where prominent members had failed or declined to explain important measures to legislators who were patrons or personal friends. On the whole, I got the impression that this excellent profession, more than usually harmonious and prosperous, and located at a point of the greatest advantage and importance, *was practically dead to everything not entirely personal.*

My opportunities for framing an opinion were more limited as to San Francisco and Oakland—in many respects one profession. While their societies attempt little except the reading and discussion of papers and the old order of routine work, so far as could be learned, they were somewhat more progressive than the one at Sacramento. No systematic effort had been made to deal with quackery and other similar problems, and the society appeared to be drifting along in the direction of least possible resistance, although made up of a profession able to guide with a master hand if aroused to the importance of doing so. The society at Santa Rosa was new and enthusiastic, that at San Jose solid and conservative, with delightful personal and social relations. Although adjoining one of the great army posts, with every facility and incentive for clinics and scientific work, the society at Monterey was weak and dormant, and things were not materially different at San Luis Obispo.

We had more time again at Los Angeles and looked into local conditions carefully. Owing largely to the personal efforts of an active and capable president, Dr. Joseph M. King, this society had made a rapid growth during the past year in both membership and interest, and a successful warfare had been waged against a number of unlicensed quacks of the lower order. Their principal work, however, had been along the old routine lines, and no serious discussion ever had been had of the vast practical problems confronting the profession at every turn. They were fairly harmonious and very prosperous and had not been alarmed by the rapid gains being made by the old as well as the almost endless new forms of quackery. And Los Angeles is a veritable paradise for quacks. Chiropractics, neuropractics, vitopaths, neuropaths, and others not classified, in addition to the common varieties with which we are all so familiar, were extensively and expensively exploited in open defiance of law and decency, all claiming, of course, not to be physicians. These combined interests appeared to have a controlling influence over the public press, and are likely to exercise a like power over the legislatures and courts within the next few years unless all the friends of scientific medicine can be united in an intelligent, systematic, comprehensive opposition. Pasadena has an excellent branch of the Los Angeles County Society, and we organized a similar one with a promising future at Long Beach.

San Diego is entitled to a chapter of its own. In this beautiful, semi-tropical city, so favored by nature and human enterprise, the profession had been engaged in an internecine, personal and factional war for years, which had brought it into great public reproach. Some of the leading physicians had been kept out of all society relations in spite of the best efforts of the councilor and others, until the strife had come to be looked on as chronic and almost hopeless. Declining to hear anything of the origin or history of their troubles, and having all the factions present at the meeting, I frankly told them of the disgrace which physicians had brought on themselves in all of the ages by causeless, senseless bickerings, how these things had consumed energies and barred progress, showed then how all had been equally to blame but equally held in public contempt for these conditions, and then, without ever referring to their local affairs, I tried to convince them that harmony and co-operation were more important in ours than in any other vocation, and that there were at least ten reasons in favor of these pleasant and profitable relations where there was but one for discord. In conclusion, I urged that if dissensions existed there a general clasping of hands, without apologies or explanations, and an individual resolution to try to do better in the future would settle everything. In less time than it has taken to tell this story there was a general and joyous handshaking going on until it embraced every one who had been in discord, and it was tacitly agreed to take every one into the society and unite in efforts to make it one

of the best in the state. Dr. Jones and I remained over for a day to join in a boat ride down the bay, which the local profession insisted on as a ratification of the era of good feeling on which they were all so rejoiced to enter.

I feel that the foregoing is a very imperfect and restricted description of local society conditions in Californina. I have described things as I saw them, but am convinced that what I have said gives a very inadequate conception of this great profession as a whole. For they have a great profession. Individually they are strong. Socially they are delightful. They are more prosperous financially than in any other section I have visited. But they are weak just where they need to be strong—in their county societies. In consequence, there has been little cohesion or unity of purpose, there has been no systematic or well-directed effort to secure the co-operation of the press and other educational agencies in creating and guiding public opinion in regard to medical and public health affairs or to concentrate the influence of the profession itself on proper legislation.

A system of local societies, composed of and uniting all of the reputable physicians in each county, meeting at short intervals and alive to, and in touch with, every proper and available power for good in their respective jurisdictions, are the only agencies through which these things can be done. In California better than in almost any other state all of the other machinery is about complete. They have a strong state society and an able and fearlessly-edited journal. It is the only state in the Union, except Alabama, which has a secretary who can devote his entire time to this work. Dr. Jones deserves to have, and to a remarkable degree has, the profession solidly enlisted in his support. Their legislation is in a bad shape. They especially need a blanket provision in their medical law, like the one we have in Kentucky, which requires every one practicing the healing art under systems now in existence, or which may hereafter be discovered, to take a fair and impartial examination. There are many other things to be done, but this should receive early attention. They have little legislative influence at present, and there is danger from adverse efforts from the combined quack interests at the next session of their General Assembly, but with such a professional and such an able and unselfish leader, and with such a system of local societies as I have urged, it can and should be the banner state of the Union in medical organization, including model medical legislation.

Society Proceedings

NORTHEAST BRANCH PHILADELPHIA COUNTY MEDICAL SOCIETY.

Organization Meeting, held at Frankford, Nov. 27, 1905.

DR. ROBERT H. CHASE in the Chair.

Origin of the Branch Idea.

DR. ALBERT M. EATON said that Massachusetts was the first to have the state divided territorially, with a medical society in each district and that Philadelphia was the first city to have this division made. The movement had its birth in June, 1901. Chicago followed this plan later. Dr. Eaton said that in originating this "branch idea" he had been influenced: 1, By the apathetic condition of the Philadelphia County Medical Society; 2, the difficulty of persuading physicians to join it; 3, the fact that the meetings were held at an hour inconvenient to most of its members, and 4, because at that time it was not properly fulfilling the purposes of its charter. Another factor helpful in the development of the "branch idea" was the reorganization of the American Medical Association. At St. Paul appeals were made to increase the membership of state societies by additions to the county societies. It had occurred to Dr. Eaton that if this work could be done over the whole nation the idea could be carried out along the same lines in cities of large population. The success of the plan was shown in the statement that in 1901 the membership of the Philadelphia County Medical Society was between 500 and 600, while in 1905 it numbers almost 1,200. At present there are five branches, with another one to form in the near future.

Development of the Branch Idea.

DR. JAMES M. ANDERS said that the branch idea was copied from the so-called district societies of London, and that the fortunes and destiny of the movement in this country were largely in the hands of the present generation of physicians. He referred to the adoption by the American Medical Association, at St. Paul, in 1901, of a report on the reorganization of the entire profession of the country. On account of the topographical peculiarities in large cities the plan recommended could only be carried out by the creation of local branch societies. Reference was made to the reorganization of the Chicago Medical Society as a brilliant example of work along the line of the development of the branch idea. No other city in the United States can boast of eleven districts, each with its own branch society. A group of branches properly distributed in Philadelphia, Dr. Anders thought would serve to create and maintain a proper interest in scientific medicine and other questions of vital import to a community of physicians not otherwise possible. No other factor, he thought, is so influential as an uplifting force in the profession of a community as a society organized under the branch idea. He urged the hearty support by all state and county societies, including the branches, of a movement inaugurated by the American Medical Association at its meeting in Portland in the creation of a "Council on Pharmacy and Chemistry." The cure of the nostrum evil, one of the greatest of the age, demands the concerted efforts of national, state and county societies. Finally, he indorsed the method proposed by the American Medical Association to effect an organization including the entire profession of America.

Benefits of the Branch Plan.

DR. JOHN B. ROBERTS said that branches are valuable because they give the opportunity for men to attend meetings who can not afford the time to go to the central body; and, because the branches encourage modest and timid members to take part in discussions, a thing they would not do in the central body, because they are not among their immediate associates. The branch system is also of advantage, because it trains men in parliamentary usage and enables the membership of the society to pick out men for the high offices who show executive ability, honesty and a desire to aid in the organization of the profession.

Organizing the Profession.

DR. A. B. HIRSH said that as organization of the profession throughout the land is in active progress, and that the county society is recognized as the unit, it is the expectation that practically all ethical physicians will become members. He reviewed the character of scientific work presented in the central body and the branches of the Philadelphia County Medical Society, showing that in this work there is offered a sort of postgraduate instruction of the general practitioner. The branches are supported by the general society and have no separate dues, and to some are added, with advantage, the social feature. Some of the advantages received through membership in the county society are receipt of the *Weekly Roster*, a bulletin containing the programs of all medical meetings for the ensuing week; membership in the Medical Society of the State of Pennsylvania; the receipt of the *Pennsylvania Medical Journal;* eligibility to membership in the American Medical Association, and in the Mutual Aid Association, a local association through which financial aid is extended to widows and orphans of members, and to members in distress. Further features of value accruing to members are those of the reports of the scientific meetings of the central body of the county society; the legal defense of members, with the state's attorney-general as counsel; the suppression of abortionists and illegal practitioners; the work of the committee on public policy and legislation of the county society, which committee, in conjunction with similar committees of other county societies, is enabled to act quickly and unitedly to prevent legislation hostile to the interests of the public and the profession. Dr. Hirsh emphasized the fact that the best interests of the profession as a whole as well as the individual practitioner demand that all reputable physicians should be in one strong, well-organized body. The membership is said to number over 1,100, with 800 eligibles remaining to become affiliated.

BOSTON MEDICAL LIBRARY MEETING.

Regular Meeting, held Dec. 6, 1905.

DR. GEORGE H. MONKS in the Chair.

Traumatic Epilepsy.

DR. DUDLEY P. ALLEN, Cleveland, Ohio, read a paper on "Traumatic Defects of the Skull; Their Relation to Epilepsy." His consideration of the subject was chiefly from the point of view of the surgeon. Of 167 soldiers reported to have been treated for head injuries in the Civil War, 23 are now drawing pensions for epilepsy. Of 527 in the Franco-Prussian War, 25 are now suffering from epilepsy. Often the symptoms are less severe, including only periodic attacks of dizziness, headache, etc. In considering these cases the surgeon must consider: 1. Can relief be obtained by operation? 2. At what period had the operation best be done? 3. What class of patients will most probably be benefited by operation? 4. What are the defects of the usual method of operation? 5. What is the best operation? His paper had chiefly to do with some suggestions as to the answer to the last question, but with regard to the others he noted: 1. There is great variation in the results reported. With a three-year limit most surgeons have obtained but few cures—from 2 to 10 per cent. Others reporting immediate relief as cure have attained 80 per cent of cures. 2. All agree that early operation is best, for then permanent destruction of brain tissue is avoided. 3. All injuries to the head should be operated on if it be judged possible that epilepsy may later develop therefrom. Of other later cases best results are obtained from those which have recurred after previous operation, from cases of Jacksonian epilepsy and when there can be found on the skull or scalp evidence of an injury which may have been forgotten entirely. 4. He prefers the method of the bone drill and forceps rather than the trephine. The chief defect seems to be that the surgeon makes no effort to repair the hole. This may be the reason for so many poor results. It is better to restore the normal. 5. For this purpose he has devised a method of using a bone flap. He lays back the scalp and removes bone and connective tissue, all of it, even down to the brain. He divides the dura, if necessary. Then he makes an incision over the thickest nearby portion of the skull and lays bare down to the periosteum. Next he marks out an area the size and shape of the hole already made, and with a chisel scales off the periosteum with chips of bone adherent underneath, laying it in the hole. The scalp is closed up with the exception of a small cigarette drain. In from twenty-four to forty-eight hours the wound is dressed and the drain removed. The second dressing is made in ten or twelve days. Dr. Allen has had seven such cases, three of which he reported to the meeting. All have healed by first intention and have a firm bony covering. One allowed him later to cut down into the new tissue, and it was found to feel and look like bone. Experiments carried out with much difficulty on dogs gave good results. The animals were killed at intervals of two weeks, one month, three months, four months and five months. It was then shown that the graft first fills in around its edges; it remains viable and grows in thickness; at five months the hole is nearly completely filled with new bone, which is quite smooth on the under side, and is covered.

DISCUSSION.

DR. W. N. BALLARD discussed the subject from the point of view of the neurologist. He said that there are few reliable statistics in regard to the possibility of preventing epilepsy by a suitable operation. In all cases of compound fracture of the skull, however, trephining should be done. Of 70 such cases only one was followed by convulsions later, and of 845 cases of epilepsy at the Massachusetts State Epileptic Hospital only 61 had had any head injury which could be assigned as a possible cause. Twenty-two of these were probably due to some other cause, and in 19 the history is deficient. Thus in only 20 cases is the diagnosis of traumatic epilepsy probable. As to United States pensioners, it must be remembered that syphilis is a very common cause of epilepsy and vitiates any such statistics. He urged early operation, thus avoiding the establishment of a habit. Shock will diminish the frequency of epileptic attacks, only to have them recur later.

DR. J. C. WARREN has operated on 11 cases for epilepsy, of which six were for traumatic epilepsy. He reported these cases in some detail, showing a gain in only two of them. He has lately used the osteoplastic resection. In one case the button and the fragments were replaced and united perfectly. He did not believe that the lack of bony covering is necessarily evil.

DR. L. B. LUND showed a boy 9½ years old who, when 4 years old, had a fall, resulting in a depression back of the left ear. Four and one-half years later he began to have convulsions of a general character, which finally became so frequent as to occur once in two weeks. He was operated on last March and a large piece of depressed bone was removed and a cyst underneath was opened. He thinks that the best cases for operation are those where a cyst is formed which can be removed. He would operate on any case of such a horrible disease as epilepsy, if a scar can be found on the head.

DR. E. E. SOUTHARD said that the pathologist now expected to demonstrate postmortem in a case of epilepsy defects in the fibrillary fibrosis and a gliosis in Ammon's horns. By Weigert's stain the neuroglia fibrils can be differentiated from the nerve tissue, and by Mallory's method they can be differentiated from the connective tissue.

DR. GEORGE L. WALTON believes in operating early and freely if there is a supposed fracture. A blow often causes a fracture or an injury deeper in without apparent damage on the outer tables. He urged giving the patient the benefit of the doubt by an early operation.

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

Eighteenth Annual Meeting, held in Louisville, Ky., Dec. 12-14, 1905.

(*Continued from page 2028.*)

Gallstones in the Cystic Duct.

DR. L. H. DUNNING, Indianapolis, presented a method which he has employed in one case which greatly facilitated the pressing backward into the gall bladder of a stone impacted into the cystic duct. In this case the gallstone was lodged in the cystic duct in front of a small stricture. After making all the efforts he deemed prudent to press the stone backward into the gall bladder without success, he then unsuccessfully attempted to dilate the stricture with the finger-tips and later with forceps. One of his assistants suggested that he thought they could better dilate with the forceps if they could see the stricture. The walls of the gall bladder were elastic. The liver was turned up, so that the gall bladder was near the surface. The opening in the gall bladder through which he had been working was enlarged a little, and then the stone was steadied and held against the stricture by an assistant. The fundus of the gall bladder was pushed forward toward the strictured entrance into the cystic duct. They so far succeeded as to bring the opening in the wall of the gall bladder directly opposite the strictured opening. They then tried to introduce the forceps tips, but failed. Picking up a pair of probe-pointed scissors curved on the flat, the point was gently worked through the fistula and the scissors opened; this did not dilate the opening sufficiently, so the edge of the fistulous ring was snipped tightly in two or three places, when they were able to dilate the fistula so as to permit the easy exit of the stone. The operation was completed in the usual way. A rubber tube was fastened in the gall bladder and that viscus was anchored to the fascia. Before they had finished the operation, a little bile had flowed into the gall bladder. Two or three ounces of bile were discharged from the tube daily; at first it was dark and thick, but gradually approached the normal color and consistency. The patient made an uneventful recovery, and had but little pain or soreness in the gall bladder region. The procedure adopted in this case may be found of service in others, but it is not applicable to cases in which the gall bladder can not be brought near the surface, or where the gall bladder is thickened by inflammatory deposits. In Dr. Dunning's experience in operating on 93 cases of gallstones, there were 10 cases of stone in the cystic duct requiring considerable effort to dislodge them. In 2 of

the cases occurring early in his experience the stones were crushed and portions left behind, subsequently giving so much trouble that cholecystectomy was finally performed.

Common Duct Obstruction.

DR. J. WESLEY LONG, Greensboro, N. C., stated that this condition is many times more serious than gallstones in the gall bladder. He quoted the unpublished statistics of the Mayo clinic, where more gallstone operations have been done than in any other clinic in the world, showing that in simple gallstones in the gall bladder the mortality of operation is less than 0.5 per cent., while the mortality in operations for common duct obstruction ranges from 11.9 per cent. in benign cases to 40 per cent. in malignant cases. These facts emphasize the prophylactic value of operating while the stones are yet in the gall bladder.

Common duct obstruction in practically all cases, Dr. Long says, is due either to stones or to malignant growths caused by the irritating presence of stones. Gallstones may exist in the gall bladder for a long while without producing symptoms, but once in the common duct, not only pronounced symptoms, but many serious complications arise. The mortality in these cases is due to the complications, the cholemia, infection, inflammation, and exhaustion due to hemorrhage at the operation. He emphasizes the fact that common duct obstruction can be treated only by surgical methods. After removal of the obstruction, the first consideration is drainage, since it is imperative to overcome the infection. No operation must be deemed finished until the patency of the opening into the duodenum is assured.

Attention is called to the importance of not removing the gall bladder in the operation of choledochotomy, since stones occasionally reform in the common duct, and in these cases the gall bladder serves for drainage.

Gangrene of the Gall Bladder; Rupture of the Common Duct.

DR. JOSEPH RANSOHOFF, Cincinnati, read a paper on this subject which will appear in THE JOURNAL.

Electrothermic Angiotribe in Abdominal Surgery.

DR. J. WESLEY BOVÉE, Washington, D. C., has employed the Downes angiotribe in 203 abdominal and 27 vaginal operations, removal of uterus, appendix, spleen, kidney, parovarian cysts, portions of intestine, etc. In these 230 cases the author has had two cases of hemorrhage subsequent to operation. He can not believe the method of hemostasis employed was responsible in either instance. In both cases he is confident latent mild infection was responsible for the hemorrhage. In no other instance has hemorrhage occurred, and he has the utmost faith in the hemostatic properties of the instrument. The advantages of the electrothermic angiotribe of Downes in pelvic and abdominal surgery seem to be a more reliable hemostasis than by ligation; freedom from hemorrhage during operation; the ease of its application in locations in which the use of ligatures would be very difficult and uncertain; the greater security against dissemination in radical operations for malignant disease; the ability to sterilize unclean areas before suturing, as in intestinal and appendiceal surgery; lessening of the tendency to the formation of postoperative adhesions; the increased speed in operations, such as removal of the uterus, the appendages, or the vermiform appendix, and the greatly lessened amount of pain following operation. The disadvantages are the danger of accidental injury of the bladder, rectum and ureter; the necessity of great precision in its employment, and the special care necessary to keep the paraphernalia in good working condition.

DISCUSSION.

DR. ANDREW J. DOWNES, Philadelphia, stated that for four years he has not used a ligature except in the case of a woman on whom he operated for extrauterine pregnancy, and who was moribund at the time. He has performed intestinal anastomoses and gastroenterostomies with these instruments; other surgeons have removed gall bladders, kidneys, etc., with them as aids. He has done 400 or 500 hysterectomies with them, while other surgeons have performed 70 hysterectomies with them.

DR. CHARLES P. NOBLE, Philadelphia, having used the Downes instruments a number of times in removing the uterus for cancer, considers them a great advantage. After the uterine arteries are tied on each side, when one comes down to the vaginal plexus, which is the most troublesome part of the operation when the ligature is used, the veins are apt to leak and flood the field, requiring a number of ligatures to secure hemostasis around the cut vagina. If these instruments are used the field will be perfectly dry. From the standpoint of recurrence of cancer, the instruments have not been used long enough to give figures as to results, but one can believe from the work of Byrne that much better results can be obtained with the aid of these instruments than with ligatures, etc.

DR. HOWARD A. KELLY, Baltimore, said that while the Downes instruments are practical and useful, he thinks that if surgeons exercise more care as to the character of ligatures they use daily, it will limit the use of the Downes method. Fine silk ligatures control bleeding from large blood vessels and are practically innocuous.

Operation for Large Rectocele.

DR. GEORGE H. NOBLE, Atlanta, Ga., presented the technic of an operation which is intended only for large rectoceles. Small rectoceles can be relieved by the ordinary perineal operations. In large rectocele not infrequently there is more or less tediousness, loss of blood in the denudation, and certain objections to puckering the overstretched and distended tissues together and forcing them into the rectum. Furthermore, there are unsatisfactory results by infecting the strong and resisting rectovaginal septum. This operation is presented for the purpose of overcoming these objections. In the technic it will be observed that the rectocele is actually resected, and that the strong or normal rectovaginal septum above the weak occluding point is drawn down to the level of the levator ani muscle and securely anchored. The steps are: 1. A thorough dilatation of the anus and recleansing of the rectum. 2. Denudation of a wide collar, as it were, the ring around the neck of the rectocele, beginning high up in the vagina and extending near to the promontory of the rectocele. It is unnecessary to remove the mucosa over the last point mentioned, as it is cut away in the resection. By proceeding with the denudation from within outward, the veins of the rectovaginal septum are cut through at a high point and secured with compression forceps, and the necessity of repeatedly cutting the same vessels in repairing the wound is avoided. 3. Two fingers are placed on the promontory of the rectocele, carried into the vagina and out through the anus, forcing the rectocele ahead of them, and in this way completely everting it through the anus. It is seized with a pair of forceps at the point where it protrudes and is gradualy drawn down step by step until the lax portions are secured and a feeling of tenseness is felt. If, in drawing the anterior rectal wall down, the normal parts of the rectum do not come as low as the levator ani, the rectum should be liberated by dissecting it from the vagina, which will permit of further descent and allow all of the overstretched tissues to project beyond the anus. 4. A light pair of compression forceps is then placed on the neck of the rectocele just external to the anus for the purpose of holding it in position. 5. Two sutures, preferably medium-sized kangaroo tendon, are passed through the unruptured portion of the perineum close to the sphincter ani muscle after the manner Emmet inserts his tension sutures in perineorrhaphy. These two sutures in passing across from side to side should take up the prolapsed portion of the anterior wall of the rectum. When tied they closely approximate and anchor sound or healthy rectum to the levator ani muscle and rectal vessels in the deep pelvic fascia. 6. The vaginal side of the wound is completed by doing a perineorrhaphy. The protruding rectocele is amputated about three-quarters to an inch external to the clamp, and its edges closely sutured with a continuous suture of catgut. The case is then treated as an ordinary perineorrhaphy, except that a wet soft dressing is placed over the protruding stump. The stump retracts within the anus in a week's time and takes care of itself. The author reported 5 cases in which he has done this operation, with very satisfactory results.

Wandering Retroperitoneal Fibroid Tumors of Uterine Origin.

DR. I. S. STONE, Washington, D. C., stated that these tumors must reach the space behind the peritoneum by way of the broad ligament. This route is the only one open and is necessarily followed by every fibroid which escapes into any part of the retroperitoneal space, however remote. After a fibroid becomes well separated from the uterus, it usually remains in the broad ligament indefinitely and will always do so unless other tumors develop in the uterus and are forced to follow directly in the same channel as the one preceding. Single tumors are generally found in the broad ligament and the development of others must occur before the variety under discussion exists. Many subperitoneal tumors are seen and few, indeed, have been noticed where the tumor has lost all connection with the uterus. Such growths can not become parasitic and receive their nutrition from some other source, as does the intraperitoneal wandering or parasitic variety. He has no experience with a single wandering tumor behind the peritoneum which has entirely lost its uterine connections and believes such development an impossibility for the reason mentioned above, that a *vis à tergo* must exist. The movement of these tumors is, therefore, directly opposite to that of the intraperitoneal variety, for the latter must have either movable organs to assist in their progress, or else traction, a result of adhesive contact, must aid in lifting or elevation of them upward in the abdominal cavity.

Dr. Stone reported 2 cases illustrating the variety described. Both of these grew to very large proportions. In the first, the largest tumor was very high in the abdomen, and was entirely separate from all former uterine connection, including its blood supply. The presence of a large wedge-shaped middle portion is sufficient proof of the mode of development. It has forced other growths both upward and downward, acting as a wedge between the two. In the second case the central portion of the specimen is made up of many small tumors which have appeared to force the larger growths in opposite directions, as in the first case. The largest growth was highest, and was completely separated from the uterus and the tumors below, except by a small amount of connective tissue, and its anterior peritoneal cover. The pelvic tumors in both of these cases were firmly impacted, and in the second case it was impossible to release the specimen without injury to deep and unseen vessels which resulted in fatal hemorrhage. The first patient made a fairly satisfactory recovery, and was now able to attend to her duties as housekeeper.

Report of 182 Operations on the Thyroid.

DR. CHARLES H. MAYO, Rochester, Minn., said that surgery of the thyroid is increasing. These operations are as satisfactory as any made, giving relief with brief disability. In 50 years the mortality has fallen from 40 per cent. to less than 3 per cent., Kocher's percentage being 2. Accessory glands, like bronchial cysts, are more often found in the lines of hypoblastic inversion. The lymphatics serve as ducts. Total extirpation is followed by cachexia in from 50 to 70 per cent. of cases. Graves' disease is probably due to an over- or perverted secretion, the glands showing a general or local condition of cell activity. The great majority of enlargements in young people respond to medication. Part of the benefit obtained in the removal of the sympathetic is from cutting the lymph channels draining the thyroid. During the past 17 years the Mayos have operated on 182 thyroids, with 9 deaths. Of these, 57 were cases of well-marked Graves' disease, with 7 deaths in all, and but 1 in the last 23. Of these cases, 50 per cent. made an early recovery; 25 per cent. did so during several months. The remainder were improved, but had occasional relapses of a temporary nature. Among the remaining 125 operations representing cysts, colloids, parenchymatous and 5 malignant tumors, there were but 2 deaths, 1 from pneumonia, the other from tracheal collapse, on the third day following extirpation of a carcinomatous goiter. Cocain was used in 13 cases, but ether anesthesia, preceded by morphia and atropin, was the rule. The head was maintained in the high position. The incision is usually transverse. Parenchymatous enlargements and some colloids were extirpated; cysts and encapsulated growths were enucleated. Saline solution was freely given after operation.

Diagnosis of Renal Calculus.

DR. GUY LE ROY HUNNER, Baltimore, Md., first considered the various other maladies of the kidney from which nephrolithiasis must be differentiated, and then the diseases of other organs which may mislead the diagnostician. The Roentgen ray and the wax-tipped bougie are considered invaluable aids in the diagnosis of renal calculus, but they both fail at times, and the importance of the urine examination in all suspected kidney cases was emphasized. Several cases were reported.

Aneurism Treated by Suture Inside the Sac.

DR. F. W. PARHAM, New Orleans, reported 2 cases treated after the method of Matas. One was an idiopathic aneurism of the popliteal artery, the other an aneurism of the second and third portions of the left subclavian. The popliteal aneurism was treated by suture, inside the sac, of proximal and distal openings separately, and continuous suture of the groove of the artery intervening. In the subclavian case only the proximal opening was sutured, the distal bleeding being controlled by ligatures. Both patients recovered. The indications for this procedure are: 1. The practicability of laying open and inspecting the interior of the sac. 2. The possibility of applying a constrictor, clamp, or temporary ligature to the proximal side of the tumor. In the second case reported the suture was employed because the proximal ligature failed to stop the bleeding completely.

The operation of suture within the sac is to be preferred to ligature, because, first, every possible bit of artery is saved except that actually forming the sac of the aneurism. Second, the suture accomplishes simple approximation of the intima and does not cut through, as may happen with ligature of an atheromatous artery. Third, all collateral bleeding in the sac is stopped by direct suture of the vessel mouths within the sac, and packing of the sac becomes unnecessary. Fourth, hence there is no disruption of the outside vascular (collateral) connections of the sac wall, already much relieved by the emptying of the sac. The reconstruction of the artery is to be attempted only in certain cases, as in aortic aneurism, where suture of the proximal opening will, like ligature, probably be fatal, and in other aneurisms where from swelling and lymphangitis, as in Morris' case, the danger of gangrene is too great to risk any interference with the nutrient stream. In such case reconstruction of the artery may be preferred for two reasons: 1. Because even a temporary continuance of the main stream will be a great advantage until the subsidence of edema consequent on the evacuation of the sac shall have somewhat relieved stress on the collateral vessels; and, 2, because, as remarked by Matas and shown in Dana's case, it is feasible at a secondary operation to open the sac again and to close the arterial opening. In abdominal aneurisms the method of Matas offers some hope of cure.

Varicosity of the Saphenous Veins, with Resulting Varicose Ulcer.

DR. ROBERT CAROTHERS, Cincinnati, Ohio, mentioned complete excision of the internal saphenous vein as being the most satisfactory operation to be employed. Until the ingenious invention by Charles H. Mayo of two instruments which subcutaneously strip the vein, it was an operation which required a long incision, tedious dissection and considerable time for its performance. Mayo's operation is very quickly and easily done, but it is not without danger from hemorrhage or sepsis. Dr. Carothers has twice performed this operation and the immediate results were satisfactory. The cases are too recent to judge of the ultimate results. They were old cases with large, troublesome ulcers treated by skin grafting. The patients were able to leave the hospital in less than three weeks, wearing an elastic porous bandage for support, and are now, at the end of about eight weeks, at work as housewives. In one case in which there was a troublesome eczema, after an effort of one week to relieve the same, he again followed the advice of Dr. Mayo, sealing the eczematous area with compound tincture of benzoin until the skin had healed.

Early Diagnosis and Radical Cure of Carcinoma of Prostate.

DR. HUGH H. YOUNG, Baltimore, Md., presented conclusions drawn from a study of 40 cases. He said that carcinoma of the prostate is more frequent than is usually supposed, in that it occurs in about 10 per cent. of the cases of prostatic enlargement, as shown also by Albarran. It may begin as an isolated nodule in an otherwise benign hypertrophy, or a prostatic enlargement which has for many years furnished the symptoms and signs of benign hypertrophy may suddenly become malignant. Marked induration, if only on intralobular nodule in one or both lobes of the prostate in men past 50 years of age, should be viewed with suspicion, especially if the cystoscope shows little intravesicular prostatic outgrowth, and pain or tenderness are present. The posterior surface of the prostate should be exposed as for an ordinary prostatectomy, and if the operator is unable to make a positive diagnosis of malignancy, longitudinal incisions should be made on each side of the urethra, as in prostatectomy, and a piece of tissue excised for frozen sections, which can be prepared in about six minutes and examined by the operator at once. If the disease is malignant the incisions may be cauterized and closed and the radical operation performed. Cancer of the prostate remains for a long time within the confines of the lobes, the urethra, bladder, and especially of the posterior capsule of the prostate resting inviolate for a considerable period. Extraprostatic incision nearly always occurs, first, along the ejaculatory ducts into the space immediately above the prostate between the seminal vesicles and the bladder, and beneath the fascia of Denonvilliers. Thence the disease gradually invades the inferior surface of the trigone and the lymphatics leading toward the lateral walls of the pelvis, but involvement of the pelvic glands occurs late, and oftentimes the disease metastases into the osseous system without first invading the glands. Cure can be expected only by radical measures, and the routine removal of the seminal vesicles, vasa deferentia, and most of the vesical trigone with the entire prostate, as carried out in 4 cases by the author and fully described by illustrations, is shown to be necessary by the 40 cases, including 8 autopsies and 10 operations. The 4 cases in which the radical operation was done demonstrate its simplicity, effectiveness, and the remarkably satisfactory functional results furnished.

Surgical Treatment of Floating Kidney; Postoperative Results.

DR. FLOYD W. MCRAE, Atlanta, Ga., argued for surgical intervention rather than attempted support by bandages or corsets, but urged careful selection of cases for operation, and the recognition of correction of associated pathologic conditions. He called attention to the frequent coincidence of floating kidney and chronic or recurring appendicitis. He described a new muscle-splitting operation, delivery of the kidney, partial decapsulation, the making of a broad quadrilateral suspensory ligament by dissecting forward the fibrous capsule from near the hilum to beyond the convex border of the kidney. A mattress suture is put in each angle of the capsule, near the hilum, from which the suspensory ligament has been dissected, and including the reflected flap from either pole of the kidney. These sutures are passed deeply into the muscles of the back, high up, so as to bring the kidney well into the hollow of the loin and close up to the twelfth rib. The quadrilateral suspensory ligament is next brought up between the separated muscles and held there by two silkworm-gut sutures passed through all the structures from within out. A cigarette drain is placed between these sutures and the remainder of the wound closed in layers with interrupted catgut sutures. Care is taken to avoid injury to iliohypogastric and ilioinguinal nerves. The operation was illustrated by drawings. Thirty-two cases were reported.

Chronic Endocervicitis; a New Method of Treatment.

DR. DANIEL H. CRAIG, Boston, said that the diagnosis is made to depend on the conditions of contraction or relaxation of the internal os. In the absence of flexion the inflammation is confined to the tissues external to the internal os. If, on the other hand, the internal os is distinguished with difficulty or not at all, because of its relaxation and wide caliber, the inflammation is above the internal os, which is thus widely dilated to favor free drainage and to guard against back pressure. Treatment by Craig's method should be strictly confined to those cases in which the internal os is distinctly contracted.

Dr. Craig's treatment consists in curetting the cervical canal up to, but not beyond, the internal os, with a specially designed curette after dilatation of the external os with a conical dilator, also specially designed for this purpose. The operation is quickly and easily performed at the office of the gynecologist without the use of anesthesia, except occasionally a few crystals of cocain at the external os, and without confinement to bed. Pain, when done without cocain, is about the same as that due to the filling of teeth. Inasmuch as the most rigid asepsis is requisite to render such ambulatory treatment safe, the author does not offer this operation for the use of those not thoroughly familiar with surgical and gynecologic manipulations, but for those who are able to establish and maintain a rigid asepsis.

The preparatory and after-treatment consist of three 1 to 5,000 formalin douches daily for three days before, and for ten days after, the operation, with avoidance of unusual exertion and abstinence from sexual relations. The cure is prompt and complete, only a relatively very few severe cases requiring more than the original curettement. Tubo-ovaritis or other concomitant disease, which may be aggravated or lead to a recurrence, constitutes a contraindication to treatment, except as an immediate preliminary to radical operation. The treatment is not intended as a substitute for tracheoplasty, nor for uterine curettement in cases in which the disease has invaded the corporeal endometrium.

DR. RUFUS B. HALL, Cincinnati, Ohio, reported 2 cases of traumatism of the ureter and pelvis of the kidney, in which the ultimate results were satisfactory.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns.]

Pruritus of the Vulva.

Frederick J. McCann, in the *Clinical Journal* (London), states there are many conditions which may be the source of this trouble; the most important of these is, perhaps, eczema. The lack of cleanliness is also a frequent cause of this condition. The presence of pediculi is another cause of pruritus, for which condition he recommends the mercurial ointment as the best treatment. Another common condition of which he speaks is the presence of tender spots on one or the other side of the vulva, which can be easily detected by using a probe, when the patient will be able to tell when the affected part is touched. The best treatment for this condition, he believes, is the application of pure carbolic acid or tincture of iodin to the tender spot. Sometimes the cautery is necessary to relieve this condition. After the use of the caustic, whatever it may be, he recommends the application of a bland ointment to these local areas. McCann mentions crops of small boils as frequent factors in producing pruritus. In other cases the condition of the urine is at fault, there is either the presence of sugar or simple hyperacidity. Consequently, whenever a patient presents herself complaining of pruritus the urine should be examined for sugar and the reaction ascertained. Climacteric glycosuria not infrequently occurs in fat women, and in those of the Jewish race, and these cases are best treated by the administration of opium given in the form of a pill, one to six grains daily. This amount should be increased or diminished according to the condition of the patient and the treatment kept up for a month or two.

In cases of hyperacidity of the urine the internal adminis-

tration of alkalies is recommended along with the local application of the following ointment:

℞. Bismuthi carbonatis.....gr. x |65
Unguenti simplicis .....℥i 30|
M. Sig.: Apply locally.

A good alkaline mixture internally, as recommended by the writer, is composed as follows:

℞. Potassii bicarbonatis .....℥ii 8|
Potassii acetatis .....℥iss 6|
Aquæ camphoræ.....℥i 30|
M. Sig.: One teaspoonful in water four times a day.

The diet must be properly regulated, and the amount of meat diminished.

Vaginal pruritus, he states, may also be caused by vaginal discharges during and after menstruation. The best treatment under these circumstances is the bismuth ointment applied locally, in order to protect the mucous membrane against the irritating discharge. As an injection a bland liquid is recommended similar to the following:

℞. Potassii permanganatis.....gr. v-x |30-.65
Aquæ dest.....Oi 500|

Other causes he mentions are pregnancy and epithelioma; he also speaks of cases in which examination fails to reveal anything wrong. These cases generally occur in neurotic women, and no marked changes in the skin and mucous membrane can be detected.

In the examination of these cases one must be thorough in order to get at the proper seat of the trouble, and it will be found that the most sensitive area in the vulva is at that part where it joins the vagina, where one may find small fissures and tender spots in the vicinity of the ring, together with a degree of inflammation extending into the vaginal canal. Consequently no treatment is of any avail unless it should be applied to the vagina as well as to the vulva, and if the general practitioner will take that into consideration he will find success in these treatments where formerly failure has been the rule.

The author recommends carbolic acid is the best preparation in the local treatment of pruritus. It will always cure this condition, he states, if used in the proper strength. It is a local anesthetic and a strong antiseptic.

According to McCann, one should begin first with a solution of 1 in 40, and if that does not prove to be strong enough, it should be increased to 1 in 20 and, if necessary, to 1 in 10. [When using phenol, carbolic acid, as recommended by this author, the possible untoward effects of the drug must be borne in mind and guarded against, as well as a possible idiosyncrasy on the part of the patient.]

There is one point on which he places special stress in the treatment of these cases, and that is that a cure will never be effected in a bad case of pruritus unless the patient is put to bed. The relief obtained by the horizontal position diminishes the local congestion and necessarily improves the condition of the patient. He states that the proper way to apply carbolic acid is to cut strips of lint and to steep them into a 1 in 20 carbolic acid solution. These strips should be about three inches in length. One inch of the strip should be introduced into the vagina and the remainder spread into the form of a fan between the labia, so as to cover the surfaces as much as possible, and should be left in place over night. He attaches importance to this method of application, and says that the strips should not be applied to the vulva alone, but should extend into the vagina, in order to give complete relief. After applying these medicated strips he advises the application to the vulva of a large pad of antiseptic wool over which boracic acid has been powdered, kept in place by means of a T bandage. After the carbolic acid his been used once or twice locally, and the conditions show improvement, the ointment of bismuth carbonate should then be applied. This ointment should be made up of carbonate of bismuth, lanolin and glycerin, which makes a fairly thick paste and forms a very effectual coating to the mucous membrane and the surrounding skin.

In case there are patients who do not yield to the carbolic acid treatment, which is very unlikely, in the opinion of this author, the following combination is recommended:

℞. Spiritus chloroformi .....℥i 4|
Olei amygdalæ .....℥i 30|
M. Sig.: Apply locally to the affected areas with a camel's hair brush or on a piece of wool or lint.

It must not be forgotten, with this preparation, that the vagina must be reached as well as the vulva, in order to cure the patient.

Hot sitz baths are very useful in combination with the treatment just described, because in many cases there is lack of cleanliness and increased amount of discharge. These sitz baths should be tepid and should contain bicarbonate of soda—half a pound of the bicarbonate of soda to the usual bath. After the bath the local parts should be thoroughly dried, the carbolic acid gauze inserted, and the boracic wool applied. When these are removed in the morning, the parts should be thoroughly cleansed and the ointment applied.

The author mentions several lotions which are of use in these cases, one of the best of which is the following:

℞. Sodii biboratis .....℥i 4|
Olei menthæ piperitæ.....m. v |30
Aquæ .....Oi 500|
M. Ft. lotio. Sig.: Apply locally.

Another good lotion is the liquor carbonis detergens, which acts almost as a specific in some cases, especially when the irritation has been alleviated by the carbolic acid preparation. The author recommends the following combination, with directions for the patient to use at home in order to prevent the return of the pruritus:

℞. Liquoris carbonis detergens |
Plumbi subacetatis, āā.....m. x |65
Aquæ .....℥i 30|
M. Ft. lotio. Sig.: Dilute with an equal quantity of warm water and apply locally to the affected part.

If an ointment is preferred, the following combipation may be ordered:

℞. Liquor carbonis detergens.....℥i 4|
Hydrargyri ammonii chloridi.....gr. x |65
Lanolini .....℥i 30|
M. Ft. unguentum. Sig.: Apply locally two or three times daily.

The author mentions in this connection that lanolin is very much better than vaselin as a base for these ointments, as it is more soothing to the irritated parts. He also mentions the fact that ointments are much better than lotions. Another lotion which he recommends is composed as follows:

℞. Zinci oxidi |
Calamini |
Mucilaginous tragacanthæ, āā.....℥i 4|
Aquæ calcis .....℥iv 15|
Aquam ad.....℥i 30|
M. Ft. lotio. Sig.: Apply locally.

As ointments the following combinations may be serviceable:

℞. Pulv. amyli |
Zinci oxidi, āā.....℥ii 8|
Lanolini .....℥iv 15|
M. Ft. unguentum. Sig.: Apply locally. Or:

℞. Unguenti zinci .....℥ii 60|
Pulv. calamini .....℥ii 8|
Pulv. amyli .....℥iv 15|
M. Ft. unguentum. Sig.: Apply locally. Or:

℞. Acidi hydrocyanici dil.....℥i 4|
Unguenti bismuthi .....℥i 30|
M. Ft. unguentum. Sig.: Apply locally.

In some cases a 4 per cent. solution of cocain is recommended to relieve this intense itching, or a weak continuous current in the so-called neurotic cases may be of service.

In the general treatment, rest and regulation of diet are important.

Another most important precaution is to prevent patients from taking alcohol, which they are liable to do because of the depressing effect that the pruritus has on their system. Local sedatives, such as the bromid of sodium in 20 grain (1.30) doses, three times a day, are advisable in some cases.

If the case should be so unruly that carbolic acid can not cure, the author recommends excising the whole ring of the mucous membrane at this sensitive area.

Medicolegal

Admissibility of Evidence of Intercurrent Disease.

The Supreme Judicial Court of Massachusetts holds, in Dickinson vs. City of Boston, that, in an action by an administrator to recover for the conscious suffering of an injured person from the time of her injury to her death, evidence which had a tendency to prove that during this period she was suffering and finally died from an intercurrent disease was admissible. But an attempt for this purpose to elicit on cross-examination from the mother of the deceased, who was a witness for the plaintiff, that other members of her family had died from pulmonary tuberculosis, and hence there was a presumption that her daughter also had died from this disease, well may have been deemed in the discretion of the presiding judge as too remote to be of any probative value, and its exclusion afforded no just ground of exception.

Attendance on Wife or Child Under Bankruptcy Law.

The United States District Court, Eastern District of New York, without attempting to define the limits of the provision in Clause 2 of Section 17a of the Bankruptcy Act, as amended in 1903, excepting from the claims dischargeable under the act for those "for maintenance or support of wife or child," holds, in re Ostrander, that it does not apply to medical attendance furnished on express or implied contract of the husband or parent to pay therefor while the recipient is a member of the family, and while there is no breach of duty on the part of the person contracting the debt toward the one receiving the service. It says that it is considered that the words, "for the maintenance or support of wife or child," do not refer to a debt incurred for the services of a physician called by the husband to attend the wife while she is in normal relation to her husband. If so, a person supplying goods for a wife or child, or rendering a service necessary for support or maintenance, at the request of the husband, without delinquency on his part, would be beyond the scope of the bankruptcy act. The grocer, the marketman, clothiers of all descriptions, physicians, dentists, in fact, all who, by service or sale, contribute to the support of the family, and thereby to the support of a wife or child, would have claims not dischargeable under the act. The provision has probable application to cases where the person applying for discharge from his debts had so betrayed his moral and legal duty as a husband or parent that another was justified in providing the maintenance and support denied by the one on whom the law places the primary duty.

Admissibility in Evidence of Photographs of Wounds.

The Supreme Court of Nevada holds, in the homicide case of State vs. Roberts, that a photograph of a wound in the back after it had been opened by the knife of a surgeon was properly excluded by the trial judge, because the bullet hole was no longer in the condition caused by the accused. But it finds no error in the admission in evidence of three photographs, one of which showed the face of the deceased in the repose of death, in which a witness was able to recognize the features of the man picked up, while the others showed the entrances of the bullets on the arm and leg, and were illustrative and instructive in connection with the testimony of the physician and other witnesses. It says that if their tendency was to give a more vivid realization of the wounds than a verbal description, they were less grewsome than an exhibition of the man's injuries to the jury in his real flesh and bone, which would have been permissible, if practicable. They had been taken the day after the man died, and were not especially repulsive, and there was testimony as to their correctness. Some extreme cases were cited where photographs were rejected on the grounds that witnesses had described what they would show, or that they would inflame or prejudice the jury—doctrines that this court is not able to sanction, and which are not supported by the weight of authority. If juries can not be intrusted with the pertinent facts for which litigants and offenders are responsible, however appalling they may be, and with the most accurate, instructive and convincing evidence of those facts, it is time to abolish the jury system. Photography, engraving and the arts of picture making are important factors in our civilization, and the courts in their search for truth should not be adverse to accepting the benefits they bring. A glimpse at a photograph may give a more definite and correct idea of a building or of a person's features than the most minute and detailed testimony. When photographs are shown to be correct representations, and give a better and clearer understanding of relevant facts, it would seem on reason and principle that their use as evidence should be favored. It is generally held that they need not be taken by a professional photographer, and that any one who knows may testify regarding their correctness.

Scope of Privileged Communications.

The Court of Appeal, Second District, California, says that the plaintiff in the case of McRae vs. Erickson and others was injured while working for the defendants in the construction of a railway tunnel. Exception was taken to the exclusion of the testimony of a physician as to a statment made to him by the plaintiff at the defendants' hospital, to which he had been taken for treatment. It was contended that there was nothing in the record to indicate that the witness was acting professionally, or with a view to treating the plaintiff, or that the information was obtained with a view to treatment, and that the information was, in fact, not necessary to enable him to prescribe or act for the patient. But the court thinks that the former point was obviously untenable. It says that the witness was a physician and surgeon, and as such was in charge of the defendants' hospital, and his services were remunerated by assessments on the wages of the men, so that he was, in effect, employed by the plaintiff. He examined the plaintiff as a physician, and the plaintiff knew that he was examining him as such, and the information sought was obtained from the plaintiff at the time he was examining him, or some time during the day. The court below was right in holding that the communication was made to the witness in the course of professional employment.

With regard to the second point, the Court of Appeal says that the court was not informed as to the effect of the statement sought otherwise than by questions from which it could not be very clearly determined what the statement would have been. If it was as indicated by one question, asking if the plaintiff made a statement explaining how the rock fell, and how it hit him, the information sought was apparently of a character necessary to the proper treatment of the patient; but information as to the direction or point whence the rock came, asked for by another question, would seem to have been unnecessary for such purpose, and to this extent, if regard be had to the most obvious sense of the statute, the point raised would seem to have been well taken. But to give to the statute this narrow construction would equally exclude from its application many, if not most, of the answers to questions usually put, and properly and necessarily put, by competent physicians to patients in cases of this kind, in order to enable them to act for their patients. This, the court thinks, would be to defeat the obvious purpose of the act.

Therefore, the court is of the opinion that the view of the court below in this case was correct, and that the intention of the statute is to exclude all statement made by a patient to his physician while attending him in that capacity for the purpose of determining his condition; nor does this construction, the court thinks, do violence to the language of the act liberally construed, which is to be understood as forbidding a physician to be examined "as to any information acquired in attending the patient, the acquisition of which was necessary (or which it was necessary for him to acquire) in order to enable him to prescribe or act for the patient." Of this necessity, from the nature of the case, the physician must commonly be regarded as the sole judge; for it would be obviously unreasonable to require of the patient the exercise of any judgment with reference to the propriety of the questions asked by the physician, except, possibly, in cases where the materiality of the question is obviously apparent.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

American Medicine, Philadelphia.

December 23.

1 Exile and Drugs in the Treatment of Tuberculosis. A. Jacobi, New York.
2 *One Patient's Experience with a Number of Specialists. G. M. Gould, Philadelphia.
3 Diagnosis of Bright's Disease. L. B. Pilsbury, Lincoln, Neb.
4 *Effect of Copper Sulphate on the Bacteriologic and Chemic Constituents of Large Bodies of Water. W. R. Stokes and J. B. Thomas, Baltimore.
5 Postoperative Nausea and Vomiting. L. E. Holmes, Asheville, N. C.
6 *Control of Nasal Hemorrhage. H. J. Mulford, Buffalo, N. Y.

2. **One Patient's Experience.**—Gould reports a case in which the patient had suffered from profound symptoms, seemingly of intestinal nature, but also from psychic symptoms, such as lapses of consciousness at least closely simulating those of major epilepsy, morbid delusions, etc. His disease was diagnosed by the leading specialists as indigestion, hysteria, neurasthenia, nervous breakdown, or hyperchlorhydria, but all the treatments ordered had no effect in lessening the symptoms. One ophthalmologist reported to the neurologist that nothing was wrong with the patient's eyes, and then tried glasses, which gave no relief. A leading consultant made the diagnosis of eyestrain as the fundamental cause of the trouble, and soon after the ametropia had been accurately corrected by the third oculist the patient was restored to health.

4. **Effect of Copper Sulphate on Bacteriologic and Chemic Constituents of Water.**—Stokes and Thomas show from their experiments that a dilution of 1 to 100,000 will destroy about 95 per cent. of the algæ in water in 48 hours, but that this dilution is not effective against water bacteria. One to 100,000 and 1 to 1,000,000 will destroy all fermentative bacteria in from 24 to 48 hours, respectively. Since the typhoid bacillus is more vulnerable than the fermentative bacteria, it is assumed that this organism can be destroyed in large bodies of water by these dilutions. The dilution of 1 to 100,000 caused a marked decrease in the total and suspended residue, as well as in the nitrates, albuminoid, ammonia, free ammonia and required oxygen. In one case in which the water contained much fine clay in suspension there was a decrease of about 25 per cent. in the total solids. In fairly impure water the fermentative bacteria were not destroyed, and the assumption concerning the destruction of the typhoid bacillus does not apply to such water.

6. **Control of Nasal Hemorrhage.**—Mulford's method consists in the subcutaneous injection of adrenal extract into the arterial supply at the nearest accessible point to the bleeding area. The injection may be made directly into the artery supplying the part, or it may be thrown into the tissue closely adjacent to the artery. The ingoing arterial current sweeps the solution directly into the leaking area, all the vessels of the part are constringed, and almost at once the hemorrhage ceases.

Medical Record, New York.

December 23.

7 *Neurasthenic States Caused by Excessive Light. C. E. Woodruff, Plattsburgh Barracks, N. Y.
8 *Curative Treatment of Pneumonia, with Points on Hydrotherapy and Therapeutic Fasting in Fevers. C. E. Page, Boston, Mass.
9 Congenital Stenoses of the Urethra. F. E. Gardner, New York.
10 Dysmenorrhea at Puberty, and Uterine Tumors. F. D. Reese, Cortland, N. Y.
11 *Tonsillitis. R. M. Niles, Scranton, Pa.

7. **Neurasthenic States, Caused by Excessive Light.**—According to Woodruff, an excess of light may be injurious owing to the underlying law that the effect of the short waves is always destructive and never constructive. The various races have been provided by nature with a degree of cutaneous pigmentation suitable for the average intensity of light in the region in which they are native. The blond, fair-skinned races are indigenous in the comparatively dark, gloomy, northern countries, whereas the inhabitants of tropical and subtropical latitudes are universally brunettes. This principle is so radical that the blonds, in the course of time, tend to become extinct if they migrate to more sunshiny regions. Woodruff states that the excess of sunlight to which the people of many parts of this country are exposed is distinctly injurious and is a potent cause of neurasthenia. He states that, as a matter of fact, neurasthenia is commoner in blonds than brunettes, is worse in cities than in the country, and is vastly benefited or cured by removal to dark, cloudy climates. The same element is of importance in the treatment of tuberculosis, and excellent results in treating the disease in this country and in Europe are obtained in sanatoria where there is a minimum of sunshine. Woodruff suggests that a uniform system of recording complexions be adopted, for the purpose of gathering statistics, and he has devised a numerical scheme of notation, by using which it will be possible to secure uniformity in the records.

8. **Curative Treatment of Pneumonia.**—Page enters a strong protest against what he terms the non-curative, not to say killing, treatment of pneumonia, which is the prevailing one and includes drugs and forced feeding plus the mischievous effects of hot poultices on hot lungs. The essential features of his plan consist in the use of cool applications to the chest and abstinence from practically all nourishment except water. In this way, he says, the disease when taken early is frequently aborted, and the normal death rate becomes 5 per cent. for private and hospital cases combined, while in private practice alone it is about 2 per cent. For pneumonia the procedure recommended is as follows: A large towel, coarse linen or cotton, is folded lengthwise in the middle, then folded crosswise in the middle, and one-half the length of this four-ply towel is wrung tightly from ice water, or the coldest water obtainable, and again folded crosswise, so as to give four thicknesses of damp towel next the skin, and the same, dry, outside. The damp folds should be freshened as often as they become at all hot, whether this be in ten, twenty, or thirty minutes. At first, in severe cases, the changes will be necessary as often as every eight or ten minutes, the intervals lengthening more and more as the inflammation subsides, and breathing consequently becomes deeper and easier. When the patient is able to breathe naturally, and the compress no longer becomes hot, and before it is felt to be an uncomfortable treatment, this local cooling should cease. In some cases hot applications are also made to the legs. Page emphasizes the untoward results attending the employment of forced feeding, and points out the great advantages of keeping the patient on a diet of warm water until convalescence is established.

11. **Tonsillitis.**—Niles urges isolation of the patient, and broken doses of calomel, followed by a saline; or, if the stomach be irritable or the patient objects to the saline, one-fourth to one drop of croton oil in combination with hyoscyamus and a carminative may be given. Quinin in tonic doses, 2 grains, three times a day, should be given in the majority of cases. Strychnin may be added, if indicated. He has found that aconitin not only controls the fever, but may abort the disease. Sodium salicylate is useful in cases presenting the rheumatic diathesis, and guaiac is serviceable both as a gargle and as a constitutional remedy.

New York Medical Journal.

December 23.

12 Diagnosis of Acute Hemorrhagic Pancreatitis. J. C. Wilson, Philadelphia.
13 *Complexions of the Insane. C. E. Woodruff, Plattsburgh, N. Y.
14 *Arteriovenous Aneurism of the Occipital Vessels. H. Cushing, Baltimore.
15 *Ten Years' Experience of the New York Department of Health with Diphtheria Antitoxin. J. S. Billings, Jr., New York.
16 Manual Treatment of Diseases of Women. G. Norstrom, New York.
17 A Study of Contagion. (To be continued.) W. S. Cornell, Philadelphia.
18 Hourglass Contraction of Stomach. O. Lerch, New Orleans, La.

13. **Complexions of the Insane.**—Woodruff discusses the statistical study of the complexion of the insane conducted by Dr. W. L. Russell, the medical inspector of the New York Commission in Lunacy, which shows the remarkable preponderance of brunettes. He concludes as follows:

Owing to the rapidly increasing data as to the damage done to living tissues by the short rays of light and the ultraviolet, if too intense, it is of vital importance that observations be recorded of the complexions of all the sick, particularly those suffering from nervous affections. It has a very practical prophylactic and therapeutic importance. Such data, to be of the greatest scientific value, should, of course, be compared with statistics of the complexions of the general population, urban and rural, native-born and alien, and also native-born of foreign parentage. This country is very backward in such anthropologic work, and it is high time it were taken up in earnest, particularly in the schools. Too long have we been damaging our blonde patients, particularly the tuberculous, by sending them south when they should be kept north. Only brunette invalids will do well in the south.

14. **Arteriovenous Aneurism of Occipital Vessels.**—Cushing reports a case of this kind in which the aneurism had existed for seven years and was the result of a fall out of a wagon on the back of the head, the patient sustaining merely a superficial contused wound which healed up promptly. A small pulsating swelling appeared shortly afterward and continued to increase in size until finally there presented itself a soft, visibly pulsating tumor, about 5 cm. in diameter and elevated about 2 cm. above the level of the surrounding scalp. Radiating from this more prominent area were several hugely dilated and pulsating veins. The operation in this case consisted of a ligation of the left external carotid artery, with excision of the aneurismal varix. The result was entirely satisfactory.

15. **Ten Years' Experience with Diphtheria Antitoxin.**—Billings shows that the mortality rate from diphtheria in New York City in 1889-91 was 37.3 per cent., whereas in 1902-04 it was only 10.8 per cent. The mortality has apparently been reduced over 200 per cent. Very much better results are being obtained at present than during the first few years following the introduction of antitoxin. Of 2,447 cases of diphtheria treated betwen 1895-1897, 641, or 26 per cent., were laryngeal. Of 4,730 cases treated from 1902-1904, only 628, or 13 per cent., were laryngeal. Billings says that there can be no doubt that this decreased frequency of laryngeal involvement is directly due to early, larger and more frequently repeated doses of antitoxin. Less than 0.5 per cent. of all children immunized contracted the disease.

Medical News, New York.

December 23.

19 The Therapeutic Outlook in Pediatrics. L. E. Holt, New York.
20 *Wandering Gallstones. W. L. Estes, South Bethlehem, Pa.
21 Chronic Rheumatism. C. F. Painter, Boston, Mass.
22 *Treatment of Lobar Pneumonia. A. Kohn, New York.
23 Clinical and Bacteriologic Study of the Communicability of Cerebrospinal Meningitis and the Probable Source of Contagion. C. Bolduan and M. E. Goodwin, New York.
24 *Results of Cold Irrigations as Compared with Warm Irrigations in the Treatment of Gonorrheal Urethritis and Endometritis. E. C. Shattuck, Manila, P. I.

20. **Wandering Gallstones.**—Estes discusses this condition and cites an illustrative case. He believes that the sequence of pathologic changes is as follows: 1. The development of the stones or stone in the gall bladder. 2. An after-infection of the interior of the gall blader. 3. Suppuration and ulceration of the lining of the gall bladder. 4. Coincident adhesions of the gall bladder to the transverse colon, to both omenta, and possibly to the duodenum and mesocolon. 5. Perforation of the gall bladder by extension of the ulceration, with adhesions strong enough to resist the pressure of the escaping contents of the gall blader. 6. Encysting fibrous sac. 7. Gradual working downward of the abscess and contents.

22. **Treatment of Pneumonia.**—Kohn urges the administration of drugs by the hypodermic method in pneumonia whenever this is possible. External applications of all kinds he condemns, except a cold compress about the chest for antipyretic purposes. Hydrotherapy which mauls and pulls the patient about, Kohn says, is harmful. He emphasizes the importance of careful management of the diet. Milk, he says, should form the principal article of food; the customary dilution with a carbonated water he does not advise. Any water containing carbonic acid, he says, is to be avoided. Strychnin, administered hypodermically, will strengthen a weak and flagging heart. When further medication is needed, Kohn uses camphor and oil. In pulmonary edema he employs wet cups. He regards the tincture of musk as the most valuable heart stimulant.

24. **Cold Irrigations in Gonorrheal Urethritis and Endometritis.**—Shattuck reports the results obtained by the use of cold irrigations in 277 cases during a period of five months as compared with the results obtained by the use of warm or hot irrigations in 295 cases during the same period of time. The cases consisted of gonorrheal urethritis, vaginitis and endometritis, with or without complications. The complication which retarded the cure most was chronic metritis. All cases were positive microscopically on beginning treatment and the patients were not discharged cured until examinations were negative both clinically and microscopically. The method of irrigation in women was as follows: Vaginal douches with ordinary douche points, followed by urethral irrigations by means of a reflux silver catheter were given twice daily. Intrauterine or intracervical irrigations were given once daily, using a return current metal catheter, except in cases where the uterus was not involved. The treatment was reinforced by vaginal tampons, once a day, of 15 per cent. ichthyol in glycerin, or 5 per cent. carbolic acid and alum in glycerin. The antiseptics which were added to the solution were, at different times, lysol in .5 to .7 per cent. solution, potassium permanganate from 1 to 3,000 to 1 to 2,000, and for intrauterine irrigation, zinc sulphate 2 per cent. solution and potassium permanganate 1 to 2,000. During half of the first period, while warm irrigations were being used, the antiseptic was lysol; during the latter half, potassium permanganate was used. During the period of cold irrigation, potassium permanganate was used almost entirely. The results, in general, obtained while warm irrigations were being used were fair. In cases in which intrauterine irrigations were given, there was, as might be expected, an occasional case of uterine colic.

Boston Medical and Surgical Journal.

December 21.

25 Report of the Committee on the Progress of the Crusade Against Tuberculosis in the City of Boston. H. Jackson, E. O. Otis, and E. A. Locke.
26 Present Attitude of Blood Examination for Diagnostic Purposes. F. E. Sondern, New York.
27 Laboratory Aids in the Diagnosis of Disorders of the Gastro-intestinal Tract. E. E. Smith, New York.
28 Some Recent Advances in Urinology. L. Heitzmann, New York.
29 Some Advantages and Fallacies of Urinary Examinations. E. C. Savidge, New York.

Lancet-Clinic, Cincinnati, Ohio.

December 23.

30 *Operative Treatment of Tuberculous Joints. H. J. Whitacre, Cincinnati.
31 Bone Tuberculosis. W. W. Vinnedge, Lafayette, Ind.
32 *Management of Neurasthenics. H. A. Rodebaugh, Columbus, Ohio.
33 Cases of Invagination (Intussusception) of the Uterus. B. Robinson, Chicago.

30. See abstract in THE JOURNAL, Oct. 28, 1905, page 1353.

32. **Id.**—Nov. 4, 1905, page 1436.

St. Louis Medical Review.

December 16.

33½ Result of an Examination of Yellow Fever Blood Indicating a Protozoan Origin of the Disease. M. Schueller, Germany.
33¾. Examples of Corrupt Medical Nomenclature. A. Rose, New York.

December 23.

34 Biographic Clinic on Berlioz. G. M. Gould, Philadelphia.

Annals of Surgery, Philadelphia.

November.

35 *Review of Five Hundred Cases of Gastroenterostomy, Including Pyloroplasty, Gastroduodenostomy and Gastrojejunostomy. W. J. Mayo, Rochester, Minn.
36 *Splenectomy for Myelogenous Leukemia. M. H. Richardson, Boston, Mass.
37 *Rupture of Intestine. R. P. Campbell, Montreal.
38 *Management of Certain Critical Cases of Intestinal Obstruction. J. W. Elliot, Boston, Mass.
39 Angulation at the Sigmoid. H. B. Delatour, Brooklyn, N. Y.
40 Mesocolic Hernia. J. F. Dobson, Leeds.
41 Lymphatic and Hepatic Infections Secondary to Appendicitis. J. C. Munro, Boston.
42 Parotitis Following Appendectomy. E. Bowe, Jacksonville, Ill.
43 Acute Gangrenous Appendicitis in Typhoid Fever Simulating Perforation. J. H. Jopson, Philadelphia.
44 *Jaboulay's Anastomotic Button. E. Beer, New York.
45 Tuberculous Peritonitis in Woman. H. O. Marcy, Boston.
46 Fracture of a Phalanx Near the Epiphysis. J. A. Wyeth, New York.
47 *Necessity of Consent to Render Surgical Operations Lawful. J. F. Shields, Philadelphia.

35.—See abstract in THE JOURNAL, July 29, 1905, page 348.

36. **Splenectomy for Myelogenous Leukemia.**—Richardson refers to a case in which a splenectomy was done for myelogenous leukemia in 1901. The patient remained well for three years, when typical symptoms of locomotor ataxia set in, to which the patient eventually succumbed. Richardson does not believe that the extirpation of the spleen had any effect on the disease, one way or the other, and that the final break up was the natural course of the disease.

37. **Rupture of Intestine.**—Campbell reports the case of a man, aged 48, who had a sudden severe pain in the abdomen following a severe lifting strain. Under ether anesthesia the abdomen was opened below the umbilicus in the median line. A peritonitis was present, most marked in the right lower quadrant of the abdomen. On exploring the internal ring of the right inguinal canal this was found enlarged, and a sac present, but no contents. The bowel in this neighborhood was first examined, and here a rupture in the long axis of the gut, large enough to admit a lead pencil, with everted mucosa, was found. In the mesentery underlying this loop was a transverse tear two and one-half inches long. The contents of the bowel had escaped and were escaping; a moderate quantity of blood clot was present, though all active hemorrhage had nearly ceased. No sign of strangulation, bruising, or injury other than the above tears could be discovered. The rupture was closed with two purse-string sutures followed by a layer of straight Lembert sutures, the abdomen was flushed out with large quantities of warm saline solution, and closed without drainage. The patient made a recovery, interrupted only by a slight artificial infection. The rupture was determined to be about the center of the ileum.

38. **Management of Certain Critical Cases of Intestinal Obstruction.**—Elliot finds that the prevalent method of enterectomy with immediate suture in cases of intestinal obstruction is attended with a high mortality due to the changed condition of the distended bowel. He urges that enterostomy with later enterectomy is to be reserved for the patients unable to bear primary enterectomy, and that enterectomy with a temporary artificial anus should be the operation of choice in all critical cases of intestinal obstruction, in which there is an opportunity for resection, whether it involves the large or the small intestine. The improvements in the technic suggested by Elliot are as follows: The upper distended bowel should not be opened until the peritoneal cavity is completely closed. The open ends of the bowel should be stitched together on their mesenteric side before they are fastened into the parietal wound. This will greatly facilitate the later closing of the artificial anus. When the artificial anus is in the small intestine, the partially digested discharge from the upper opening should be collected and injected into the efferent opening. The closing of the artificial anus is a safe operation, and hardly disturbs the convalescence. Up to the present time not enough patients have been operated on by this method to estimate the relative mortality, but cases reported by Eliot, and others referred to, he thinks, suggest the probability of better results than have been obtained by enterectomy with immediate suture.

44. **Jaboulay's Anastomotic Button.**—As the result of considerable experimentation Beer is convinced that this button has the advantage of being easily and very rapidly introduced, without making a large incision in the bowel. On the other hand, it has the disadvantages that it divulses and tears the incision, that its halves must be driven home with great force, and that it frequently becomes firmly fixed in the anastomosis and is not eliminated. In advanced carcinoma cases, especially in very feeble patients with gastric cancer, the saving of time by the use of the Jaboulay button may be life prolonging, while the fact that it may not be passed is of little or no consequence. To emphasize its usefulness in this field in this type of cases, Gayet reports only 79 per cent. mortality in the last 41 cases of gastroenterostomy for carcinoma ventriculi. The cases in which rapidity of operating is less essential, Beer can not see justification for using the new contrivance.

47. **Necessity of Consent to Render Surgical Operations Lawful.**—According to Shields, consent of an adult patient in good mental health is sufficient to relieve the surgeon of liability in all classes of cases. In the case of insane patients, the surgeon should have the person legally declared a lunatic, if time permits, and have the consent of those legally in charge of the lunatic. If the urgency of the case does not permit such delay, the consent of those directly in control of the lunatic and the "consent" of the lunatic, if possible, should be secured. In all cases of sudden and critical emergency, the law will imply consent or justify the surgeon's act by implied license. This is true as to all individuals, adults or minors. In the case of minor children, consent of parent and child, if possible, should be obtained to protect the surgeon against litigation. Under the age of 14 years the parents' consent is especially necessary to protect the surgeon against litigation and error of judgment. Over the age of 14 years the consent of the child, in serious cases, would appear sufficient.

Alienist and Neurologist, St. Louis, Mo.

November.

48 An Early American Description of Astasia-Abasia. C. F. Taylor, New York.
49 Case of Unusual Sexual Precocity. H. M. Rich, Detroit.
50 Fright Etiology as a Basis for Damages. J. G. Kiernan, Chicago.
51 Relations Between Physical Diseases and Mental Disorders. L. W. Weber.
52 *Pathology of Epilepsy. M. R. Hughes, St. Louis, Mo.
53 Mixoscopic Adolescent Survivals in Art, Literature and Pseudo-Ethics. J. G. Kiernan, Chicago.

52. **Pathology of Epilepsy.**—Hughes attempts to show that each epileptic stage has a distinct pathology, and the entire category or classification of epilepsy, including the psychical varieties, has one common pathology or gross structural change, and that this structural change, whether idiopathic or organic, has to do largely with the movements of the centrifugal and centripetal mental forces as we find them in the psychical equivalence of epilepsy, dual consciousness, obliviousness and allied states of mental eclampsia.

Annals of Otology, Rhinology and Laryngology, St. Louis, Mo.

September.

54 *Frontal Sinusitis—Diagnosis, Treatment and Results. C. G. Coakley, New York.
55 Intranasal Route in Operating on the Nasal Accessory Sinuses. W. A. Wells, Washington.
56 Results of Operations by Way of the Maxillary Route for Combined Disease of the Maxillary Antrum, Ethmoid Labyrinth and Sphenoid Sinus. T. P. Berens, New York.
57 External Operation for the Relief of Ethmoiditis. L. A. Coffin, New York.
58 Further Experience with Radical Operations from Frontal Sinus Disease. W. Freudenthal, New York.
59 Two Successful Cases of Obliteration of the Frontal Sinus After Repeated Operations. H. H. Curtis, New York.
60 Inflamed Dentigerous Cyst Simulating Abscess of the Antrum of Highmore, Caused by an Odontoma. W. H. Haskin, New York.
61 *New Operation and Instruments for Draining the Frontal Sinus. E. F. Ingals, Chicago.
62 Address of the President of the American Laryngological, Rhinological, and Otological Society. F. C. Cobb, Boston.
63 Observations in Two Hundred Cases of Mastoid Disease with Operations. F. B. Sprague, Providence, R. I.
64 Tinnitus Aurium and Hallucinations of Hearing, or Relation of Ear Disease to Auditory Hallucination of the Insane. W. S. Bryant, New York.
65 Meniere's Complex of Symptoms—With a Criticism on Quincke's Lumbar Puncture Treatment and an Account of the First Recorded Case Treated Successfully by Hypnotic Suggestion. T. W. Parry.

54. **Frontal Sinusitis.**—Coakley's paper is based on a study of 58 cases of acute frontal sinusitis. The diagnosis, treatment and results are discussed in detail. Of the 58 patients, 17 had both the frontal sinuses involved, while 41 had only a single sinus, the right 22 times and the left 19. Of the 41 cases of unilateral frontal sinusitis, the antrum showed clear on transillumination 7 times and was not irrigated. In the 34 cases in which there was a shadow on the face on the affected side, the antrum was irrigated, and pus washed out in each case. Of the 17 cases of bilateral frontal sinusitis, both antra were irrigated, owing to imperfect transillumination, and pus found in every case. In 13 of the 34 unilateral cases, the antrum was irrigated but once, the shadow growing less and disappearing after from three to seven days. In the other 21 cases, the original shadow was darker, and the antrum was irrigated two or three times, oftenest in a girl of 16, who was irrigated every other day for two months. The 17 patients

with bilateral fronto-maxillary sinusitis, all had their antra irrigated more than once. The antrum was, therefore, involved in 51 of the 58 cases. Ethmoiditis was considered to be present when considerable swelling was found in the region of the bulla and posteriorly. In 47 cases the swelling was marked and ethmoiditis considered present. In 26 cases the sphenoid was involved, as determined by irrigating the cavity. In the 17 bilateral frontal cases, both sphenoids were involved in 8, the right sphenoid in 2 and the left in 3, making 13 cases in all. Of the remaining 13 cases complicating the 41 unilateral frontals, the right sphenoid was involved 8 times and the left 5 times. So far as known, only 1 patient among the 55 had a return of the disease, accompanying an attack of the grippe. The average duration of treatment was nine days, the shortest four days. One patient was under observation for two months on account of an associated acute maxillary sinusitis, the frontal sinus discharging for five weeks at least, and possibly a little longer. Coakley says that patients suffering from acute frontal sinusitis should remain indoors and be given such drugs as would ordinarily be used in abating the general infection, as, for example, influenza, of which the sinusitis is but a complication. Opium and morphin are contraindicated. External applications of moist heat, by cloths wrung out in very hot water, always prove agreeable, giving great relief. Occasionally cold applications in the shape of ice cloths or an ice bag to this region will produce the same results. Cold, however, is not usually so well borne as heat. The internal local treatment employed consisted of the establishment of drainage and irrigation with adrenalin, cocain and saline solutions. The external operative treatment employed consisted of opening into the frontal sinus through the anterior or inferior wall.

61. **New Operation for Draining Frontal Sinus.**—In performing this operation Ingals first introduces a small silver canula and washes out the frontal sinus with a 50 per cent. solution of the commercial solution of peroxid of hydrogen, warm, immediately following this with a warm saturated solution of boric acid. He then injects into the sinus, slowly, from five to ten minims of the following solution which trickles down about the canula and anesthetizes the field of operation:

R. Atropinæ	gr. 1/10	006
Strophanthini		
Suprarenalin, āā	gr. 1/5	012
Olei caryophyli	m. iii	2
Acidi carbol.	gr. x	66
Cocain hydrochl.	3iss	6
Aquæ dest., ad	3i	30

He then introduces his steel pilot, which is no larger than an ordinary probe, and, with the patient in the sitting position, administers chlorid of ethyl for about a minute; this insures complete anesthesia. The handle is removed from the pilot and a hollow burr (which has already had a flexible sheath slipped over it and been attached to the chuck of a dental engine) is slipped over this pilot into the nares and up to the lower end of the naso-frontal canal. Gentle continuous pressure is then made, the electric current is turned on, and within a few seconds the frontal sinus has been entered. Before turning on the power Ingals says that one should note just how much of the proximal end of the burr protrudes from the nostril, otherwise he will not know when it has passed into the sinus and may waste time in the futile effort to make it go farther. One can not recognize the drilling of the bone either by sound or by the feeling of the instrument. As soon as the sinus has been entered the burr is withdrawn and a packer, the end of which has been bent to the same curve as the pilot, is introduced, and through it the frontal sinus is packed and dried by a strip of absorbent gauze an inch in width, which is left long enough to stop any bleeding. The gauze is then withdrawn and a similar strip, saturated with 95 per cent. of carbolic acid or with a 10 to 20 per cent. solution of chlorid of zinc is introduced in the same way and allowed to remain a few minutes. The packer is then withdrawn about an inch to insure thorough cauterization of the whole canal, and this strip is then drawn out, through the packer, so as to avoid cauterizing other parts of the nasal cavity. A gold tube, the upper end of which has been sprung together and covered with a gelatin capsule, is then slipped on an applicator and passed up the canal until stopped by its lower flaring end. A probe is now pressed up against the end of the tube and the applicator is withdrawn. When the gold tube has been placed in the canal it is crowded off the applicator, as the latter is withdrawn, by pushing the spiral tube upward. Within half a minute the gelatin capsule will dissolve and the end of the tube will have opened out so that it will be retained. The operation is then complete. Ingals gives the patient a small springe with a bent nozzle, by which the frontal sinus can be washed out or medicated. Little or no attention by the surgeon will be needed afterward.

Journal of Nervous and Mental Diseases, New York.

November.

66 Study of Dementia Præcox. D. O. Hecht, Chicago.
67 *Early Ocular Signs of Dementia Paralytica. W. A. Holden, New York.
68 Psychasthenia: Its Clinical Entity Illustrated by a Case. S. I. Schwab, St. Louis, Mo.

67. **Early Ocular Signs of Paralytic Dementia.**—Holden records the ocular conditions of 70 pareties in an early stage of the disease, showing how far pupillary disturbances may be of value in diagnosis. Each pupil was measured with the pupilometer while the other eye was covered, thus excluding any consensual contraction. The shape of the pupils was perceptibly irregular in 51 patients, or 70 per cent. Inequality of the pupils was found in 32 patients, or 45 per cent. The sensory pupillary reflex was absent in 61 patients, or 87 per cent. The direct light reaction was perceptibly sluggish in one or usually both eyes in 15 patients, or 21 per cent. The direct light reaction was entirely wanting in one or usually both eyes in 20 patients, or 28 per cent. The convergence reaction was sluggish in 6 patients, or 9 per cent., in all of whom the light reaction was sluggish or wanting. The size of the pupils ranged from 1.5 to 5 mm., and in 37 patients, or 55 per cent., one or both pupils were smaller than the average size for the patient's age and refraction. Among the 20 cases in which the light reaction was lost, in 7 cases one or both pupils were 4 mm. or more in diameter, but it is likely that they had been small earlier in the disease. Holden believes that in true, uncomplicated paresis there is early in the disease almost constant absence of the sensory reflex, in half the cases irregularity of the pupils, in nearly half inequality of the pupils, in more than half abnormally small pupils, in a fifth of the cases loss of light reaction, in another fifth marked sluggishness of light reaction, and in a few of those with diminished light reaction a diminution of convergence reaction also.

Journal of South Carolina Medical Association, Charleston.

November 21.

69 Surgery of the Kidney. C. M. Rees, Charleston, S. C.
70 A Plea for a Simpler Materia Medica and More Rational Medication. R. E. Mason, Charlotte, N. C.
71 Operative Treatment of Concomitant Amblyopic Squint. E. F. Parker, Charleston.
72 *New Operation for Tubo-Ovarian Abscess. A. E. Barker, Charleston.

72. **New Operation for Tubo-ovarian Abscess.**—To avoid the danger of rupture of this abscess while it is being dissected out, Baker has devised a method which has enabled him to enucleate six of these abscesses in succession without rupturing any of them. The first step in the operation consists in making a free abdominal incision. The patient being in the Trendelenburg position, the abdominal cavity is carefully walled off with pads. All adhesions are broken up, thus liberating the uterus and abscess from the surrounding viscera. With Bissell's clamp, Baker clamps two or more inches of the broad ligament between the abscess and the side of the pelvis, and with scissors severs as much of the broad ligament as is clamped. This will free and make easy the dissection of the abscess on that side. If necessary, a similar clamp is applied between the uterus and the abscess, including in the bite the Fallopian tube and the broad ligament. After this is severed the abscess can easily be lifted out of Douglas' cul-de-sac without making any undue pressure on the friable walls during the dissection. Baker lays stress on the importance of draining through the vagina if infection should occur before or during the operation, also of putting the patient in a half-sitting position to favor drainage and to prevent the infection from ascending to the abdominal cavity.

The Laryngoscope, St. Louis, Mo.

October.

73 Jurisprudence of the Nose, Throat and Ear. H. W. Loeb, St. Louis.
74 *Submucous Cautery—Its Use in the Treatment of Hypertrophy of the Inferior Turbinates. S. J. Kopetzky, New York, N. Y.
75 Tumors of the Middle Ear, with Report of Two Rare Varieties. J. C. Beck, Chicago.
76 Acute Eustachian Salpingitis. F. H. Koyle, Hornellsville, N. Y.
77 Contribution to the Treatment of the Diseased Attic. F. C. Hotz, Chicago.
78 Intranasal Pressure a Cause of Headaches, Diplopia and Other Ocular Disturbances. K. W. Baldwin, Philadelphia, Pa.
79 New Instrument for Mastoid Surgery. W. S. Bryant, New York.

74. **Submucous Cautery.**—Kopetzky has devised a submucous cautery which lessens the totality of the mass of redundant tissue, but does not destroy the epithelium, and the resulting band of connective tissue is placed so deep in the turbinate body that no interference with the functionating power of the turbinate is brought about. The blade of the instrument is made of an alloy consisting of about 30 per cent. platinum irridium, a mixture of metals which easily and quickly becomes white hot when the electric current is passed through them, yet having sufficient stability to retain its shape and to permit its introduction into the tissues while cold. The cautery end is 1¼ inches long, ¼ inch broad, and as thin as it is possible to make it without sacrificing rigidity. The handle is made of metal and fits into any standard cautery handle. The field of operation is cleaned of all secretions, and a 4 per cent. solution of eocain, or a 10 per cent. solution of B. eucain is applied over the hypertrophied tissue, followed by an application of a 1 to 1,000 adrenalin solution. It is not necessary to cause a complete depletion of the blood vessels, nor is it required to completely anesthetize the mucous membrane. If the mucous membrane is tightly contracted down to the bone, the introduction of the cautery knife into the tissues presents difficulties. The tip of the instrument being sharp, its introduction into the tissues causes very little sensation, if any at all. When the nostril is prepared, the instrument is introduced (cold) into the redundant tissue, along the septal side of the turbinate bone, backward, under the mucosa, as close to, and following the septal side of the bone as it is possible to go. In those cases in which the redundancy of the hypertrophied tissue is irregular, or in which the condition exists, which in a recent study of pathologic conditions of the mucous membrane of the turbinate, Kopetzky designates as "etat mamelonne," the submucous cautery should only be introduced into the circumscribed hypertrophied portion; the septum and the remainder of the turbinate being protected from the action of the protruding blade end by thin pieces of cardboard of a Bernay sponge. The instrument in position, the electric current is allowed to pass for a few seconds only, and the instrument is at once entirely withdrawn from the nose before it cools. A slight bleeding may occur from the point of entrance. Looking into the nostril immediately after the cauterization one should observe a whitening streak, slightly broader than the blade of the instrument, shining through the overlying strata of the mucosa. This disappears in the course of a few hours. A light dressing of cotton, wet with a 1 per cent. solution of a silver preparation, is then applied to the entire turbinate. The reaction following this procedure is very slight. The results obtained have answered all the indications calling for the use of the cautery. Kopetzky has employed this method in one case of localized hypertrophy of the inferior turbinate and in 10 cases of diffuse hypertrophy of the inferior turbinate. Among the latter one patient gave postoperative evidence of hemorrhage which, however, was easily held in check by adrenalin. In none of the cases was the reactionary coryza as marked as when the ordinary cautery is employed, and in no case was there any evidence of scarring or scabbing except at the small point of introduction of the instrument. This method of cauterization absolutely does away with any chance wounding of the septal mucous membrane and consequent synechia formations.

American Journal of Obstetrics, New York.

November.

80 *Etiology of Floating Kidney with Suggestions Changing the Operative Technic of Nephropexy. H. W. Longyear, Detroit, Mich.
81 *Pyosalpinx in Pregnancy and Confinement. O. H. Elbrecht, St. Louis.
82 *Considerations on the After Management of Abdominal Sections. W. B. Chase, Brooklyn, N. Y.
83 *General Principles in Conservative Pelvic Surgery. J. F. W. Whitbeck, Rochester, N. Y.
84 *Trivial Pathologic Conditions of the Uterus and Adnexa Considered as Causes of Severe Gastric Disturbances. F. Reder, St. Louis, Mo.
85 *Treatment of Prolapsus Uteri. H. E. Hayd, Buffalo, N. Y.
86 *Liver Surgery. W. J. Gillette, Toledo, Ohio.
87 *The Byrne Operation and Its Application in the Radical Treatment of Cancer of the Uterus. X. O. Werder, Pittsburg, Pa.
88 *Papillary Cystadenoma of the Breast. E. J. Ill, Newark, N. J.
89 *Indications for Hysterectomy in Acute Puerperal Septicemia. C. G. Cumston, Boston, Mass.
90 *Abdominal Hysterectomy for Multiple Fibroids Complicated by Pregnancy. J. H. Carstens, Detroit, Mich.
91 *Personal Experience in Myofibromata of the Uterus. M. F. Porter, Ft. Wayne, Ind.
92 *Unusual Dilation of Cornual Blood Vessels; Rupture into Uterine Cavity; Hysterectomy; Recovery. F. F. Simpson, Pittsburg.
93 *Primary Bowel Resection vs. Artificial Anus in the Treatment of Strangulated Hernia. J. Y. Brown, St. Louis.
94 *Intestinal Obstruction. L. C. Morris, Birmingham, Ala.
95 *Diagnosis. J. B. Deaver, Philadelphia.
96 *Cesarean Section. H. Schwarz, St. Louis.
97 *Appendicitis as a Factor in the Diagnosis and Treatment of Abdominal and Pelvic Tumors—Also Complicating Pregnancy. R. B. Hall, Cincinnati.

80, 91, 92, 93, 94, 95 and 97.—THE JOURNAL, Oct. 14, 1905, pages 1191 to 1193.

81, 83 and 96.—THE JOURNAL, Sept. 30, 1905, page 1021.

82, 84, 85, 86, 87, 88, 89 and 90.—THE JOURNAL, Oct. 7, 1905, pages 1108-1110.

Physician and Surgeon, Detroit and Ann Arbor.

October.

98 Indications for Operation in Pelvic Disease. R. Peterson, Ann Arbor.
99 Fever in Chronic Pulmonary Tuberculosis. H. L. Begel, Ann Arbor.
100 Use of Tuberculin as a Diagnostic Agent. R. A. Brown, Ann Arbor.
101 Sanatorium Treatment of Tuberculosis. R. O. Beakes, Ann Arbor.
102 Home Treatment (Non-Medicinal) of Tuberculosis. H. N. Bradley, Ann Arbor.

Fort Wayne Medical Journal-Magazine.

November.

103 Differential Diagnosis Between Typhoid and Tubercular Diseases. J. S. Boyers, Decatur, Ind.

Texas Medical News, Austin.

October.

104 Modern Methods of the Management of Tuberculosis of the Lungs. H. N. Graves, Georgetown, Texas.
105 Antistreptococcus Serum per Rectum. B. Cornick, San Angelo, Tex.
106 School Life in Relation to Health. P. Zenner, Cincinnati.
107 Diagnosis of Typhoid Fever. C. M. Cooper, San Francisco.

November.

108 Rheumatoid Arthritis. J. W. Torbett, Marlin, Texas.
109 Modern Treatment of Pneumonia. W. J. Mathews, Austin, Tex.
110 The County Society. J. C. Larkin, Hillsboro, Ohio.

Virginia Medical Semi-monthly, Richmond.

October 27.

111 The Country Doctor. W. S. Christian.
112 Death from Peritonitis Due to Gonorrhea. A. Stone, Worth, W. Va.
113 Headaches. D. L. Field, Jeffersonville, Ind.
114 Treatment of Corneal Ulcer by the General Practitioner. C. P. Jones, Newport News, Va.
115 Practical Points in X-Ray Therapy. A. L. Grey, Richmond, Va.
116 Operation for Repair of Complete Laceration of the Female Perineum. C. E. Ristine, Knoxville, Tenn.
117 Preventive Medicine and Its Relation to Municipal Government and Society. B. C. Keister, Roanoke, Va.

November 10.

118 Unusually Large Foreign Body in the Larynx for Five Days. J. Dunn, Richmond.
119 Treatment of Summer Diarrhea of Infancy. T. M. Baird, Crewe, Va.
120 Autointoxication. D. L. Field, Jeffersonville, Ind.
121 Osteomyelitis. A. R. Shands, Washington, D. C.
122 Plastic Operations for Acquired Defects of the Lips. J. S. Horsley, Richmond, Va.
123 Present Status of Water Analysis in Connection with the Investigation of Typhoid Epidemics. E. C. Lecy, Richmond.

November 24.

124 Uterine Fibromata Complicating Pregnancy and Labor. E. P. Davis, Philadelphia.
125 Line of Least Resistance. P. B. Barringer, Charlottesville, Va.
126 Appendicitis. J. Price, Philadelphia.
127 Fatal Cases of Smallpox. L. Eliot, Washington, D. C.
128 Early and Preventive Treatment of Acute Otitis Media. O. Wilkinson, Washington, D. C.
129 Principles of Surgery. S. McGuire, Richmond, Va.

Pacific Medical Journal, San Francisco, Cal.

November.

130 Is There Any Limit to Man's Usefulness? W. Anderson.
131 Late Toxic Effects of Anesthesia. H. D. Power.

Northwest Medicine, Seattle, Wash.

October.

132 Organization of the Medical Profession. J. N. McCormack, Bowling Green, Ky.

November.

133 Arteriosclerosis—History, Etiology and Pathology. W. A. Shannon, Seattle.
134 Arteriosclerosis, Symptomatology and Course. P. V. von Phul, Seattle.
135 Arteriosclerosis, Complications and Sequelæ. W. B. McCreery, Tacoma.
136 Prognosis in Bright's Disease. L. R. Markley, Bellingham, Wash.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

December 9.

1 Principles of Treatment of Typhoid Fever. W. Ewart.
2 Are the Problems of Cancer Insoluble? E. F. Bashford.
3 Shock. J. D. Malcolm.
4 *Atypical Internal Derangements of the Knee Joint. A. E. Barker.
5 Acute Arthritis Deformans. B. Abrahams.

4. **Atypical Derangements of Knee Joint.**—Barker points out that the physician may meet with atypical as well as with typical cases of "internal derangement" of the knee, and that he must be prepared for them. He also insists that with flexion of the joint, combined with external rotation of the knee, it is possible with a good light to discover which of the varieties is present. He has never been obliged to divide the internal lateral ligament, and holds this practice to be most undesirable, as likely to weaken the joint. Further, his own cases—now very numerous—prove that, whatever variety is met with, it is possible to deal with the case without ever allowing the hand or finger to come in contact with the wound or with any part of the joint surface. He believes this to be most important, and that it is one of the reasons why he has never had any inflammatory trouble in these joints which has injured the patients.

The Lancet, London.

December 9.

6 Diseases in Relation to Spa Treatment. A. P. Luff.
7 *General Principles of the Therapeutic Inoculation of Bacterial Vaccine as Applied to the Treatment of Tuberculous Infection. A. E. Wright.
8 Points in Relation to the Administration of Tuberculin. D. Lawson, and I. S. Stewart.
9 Case of Syringomyelia. A. D. Ketchen.

7. **Therapeutic Inoculation of Bacterial Vaccines of Tuberculous Infection.**—Wright says: 1. Our first efforts ought to be directed to bringing back the infection to the condition of a purely localized infection. Rest in bed and the adoption of measures for increasing the coagulability of the blood would be the appropriate methods for the achievement of this end. 2. As soon as this first object has been achieved it should be our aim to substitute for the inappropriately adjusted, inappropriately interspaced autoinoculations, which wore down the patient without achieving effective immunization, a system of appropriately adjusted and appropriately interspaced inoculations of a tubercle vaccine. 3. Finally, as soon as a satisfactory anti-bacterial pressure has been achieved in the blood, it should be an object of endeavor, by the regulation of the patient's exercises and by attention to his blood pressure and by taking steps where necessary to diminish the coagulability of his blood, to irrigate in a methodical manner all the foci of infection with a lymph rich in bacterial substances.

Journal of Tropical Medicine, London.

December.

10 *New Process for the Microscopic Diagnosis of Tinea Imbricata. U. Paranhos.
11 *Eucalyptus Oil as a Vermifuge in Ankylostomiasis. L. P. Phillips.
12 Case of Ainhum in Its Earlier Stages. F. C. Wellman.
13 Notes from Angola (continued). F. C. Wellman.
14 Spirochete Found in Yaws Papules. F. C. Wellman.
15 Symmetrical Pendent Keloids of the Ear. F. C. Wellman.
16 Smallpox Inoculation in India. G. H. Fink.

10. **Microscopic Diagnosis of Tinea Imbricata.**—Paranhos' method is as follows: The suspected scale is bathed in essence of wintergreen during five minutes. The procedure is repeated with Roux-mixture, absolute alcohol, and ether in equal parts. The scale is placed in the following solution for ten minutes:

Common ammonia	℥i	30
Distilled water	℥iii	100

After dissociation the scale is spread in the ammoniacal solution by means of a little glass rod on a slide, fixing it with heat and coloring it with the infrachromatic mixture, then freezing it for ten minutes, having beforehand washed the preparations with distilled water.

Aniline blue	gr. xv	1
Carbonated lithia	℥ss	15
Distilled water	℥v	150

These different ingredients are mixed up by shaking the liquid well, then warming it in a water-bath during a quarter of an hour, and keeping it in a bottle with emery cork during three days and in a stove at 37 C. The reaction is corrected to a weak alkalinity with a solution of acetic acid at 5 per 100. The coloration being thus obtained, the slide is washed in running water, dried with filter paper and treated with neutral cedar oil. It is examined with an immersion objective.

11. **Eucalyptus Oil in Ankylostomiasis.**—The following is the routine method employed by Phillips: About 6 p. m. the patient takes a saline purge and then fasts all night, and the next morning at 7 takes half of the following mixture:

Eucalyptus oil	m. xxxix	2.5
Chloroform	m. lii	3.5
Castor oil	℥x	40

In half an hour's time he takes the other half; he is kept in bed, still fasting, until the bowels act. Should any depression occur after the first half of the mixture is taken, the second half is omitted. In young boys and in feeble, anemic patients the dose is divided into thirds and given at twenty-minute intervals. The dose can be repeated every other day. This effects a considerable saving of time necessary for treatment. As a rule, from three to four liquid stools follow, though sometimes only one. In the first stool there are no worms, and in the first solid stool after the medicine has ceased acting there are also no worms. The worms are expelled alive.

Intercolonial Medical Journal of Australasia, Melbourne.

October.

17 Twenty Years of Sanitary Progress in Melbourne. J. Jamieson.
18 Differential Diagnosis of Appendicitis in Women. J. W. D. Hooper.
19 *Cyst of Gartner's Duct. F. A. Nyulasy.
20 Puerperal Sepsis. H. O. Cowen.
21 *Bacteriology of Puerperal Infection. H. C. Lloyd.
22 Chemical Effects of the X-rays. F. J. Clendinnen.
23 *Lymphadenoma (Internal) Treated by the X-Rays. F. J. Clendinnen.

19. **Cyst of Gartner's Duct.**—Nyulasy's patient, a woman aged 27, complained of constant aching pains in the back, tenderness in the left ovarian region, severely painful, scanty menstruation, worse since her marriage, four years before, constipation, and occasional difficulty in urination. On examination the cervix was found lying up under the pubic arch, and the narrow end of a fluctuating tumor was dipping down behind the cervix, and in close contact with it. A distinct fullness in the right iliac fossa could be detected on palpation, but was not obvious on inspection. An incision three inches long was made in the midline below the umbilicus. A part of the cyst was seen lying snugly in the right iliac fossa. There was a little ascitic fluid surrounding the growth, and its peritoneal covering had a dark, deeply congested appearance. The Fallopian tube and upper part of the mesosalpinx were quite free from the cyst; the abdominal end of the tube was closed. The ovary lay on the anterior and outer part of the cyst, but was not attached to it anywhere. The cyst extended right across, behind the uterus, to the opposite side, and lay in contact with the left broad ligament, which was wrapped firmly round it. The left Fallopian tube was dilated into a hydrosalpinx as large as the caliber of the small intestine; the corresponding ovary was dilated into a cyst the size of a small mandarin orange, and both were bound down by universal ad-

hesions. The uterus was displaced forward by the main cyst, and had also been pushed over to the left as the growth enlarged. On cautiously passing the fingers behind the tumor, as far as they could safely reach, they dipped right down into the pelvis, where many bands of adhesions were felt crossing in an antero-posterior direction, between the pelvic and tumor walls. The tumor itself was situated between the walls of the mesometrium, and was everywhere densely adherent to it. The tumor, moreover, had lifted up the posterior wall of the peritoneum, and there effected some important attachments. The bladder was free from the cyst, which contained two and a half pints of perfectly clear watery fluid. The collapsed cyst was then removed. Many of the adhesions on the anterior part of the cyst were so dense that they could not be torn through with the fingers, but had to be cut with scissors. The right ureter was flattended out into a broad band, firmly attached to the base of the cyst wall, the peritoneum having been lifted off the ureter by the growing cyst. The ureter was separated from the cyst by the aid of dissecting forceps and scissors. This being accomplished, the enucleation of the rest of the cyst was comparatively easy. Having made sure that there was no bleeding into the pelvis, and feeling convinced that there was nothing septic to be feared, either from the growths or the sponges, instruments and ligatures, it was decided to dispense with drainage altogether, and the wound was, therefore, closed in three layers, and dressed with iodoform gauze and a flannel roller bandage. The patient made an uneventful recovery.

21. **Bacteriology of Puerperal Infection.**—Of 159 cases of puerperal sepsis examined by Lloyd, streptococci were found in 83 cases; staphylococci in 30; pneumococci in 17; gonococci in 21; *Bacillus coli communis* in 22; no organism in 21; long bacilli in 20; diplococci, undifferentiated, in 10, and *Bacillus aerogenes capsulatus* in 2.

23. **Lymphadenoma Treated by the X-Rays.**—On examining his patient Clendinnen found a tumor in the abdomen lying to the right of the umbilicus, extending about 2¼ inches upward and downward, and 3 inches to the right. It felt lobulated, was firm, fixed, tender, and it did not move with respiration. It had an apparently communicated impulse. The pulses in the femorals and tibials in both limbs were equal. The abdomen was opened by an incision through the right rectus sheath, the rectus being displaced. The tumor was found to be retroperitoneal, the posterior peritoneum over it was divided, and the tumor exposed. It consisted of a mass of enlarged lymphatic glands lying along and adherent to the vena cava and aorta. It was considered inadvisable to remove the growths and the incision was closed. The wound healed, and the patient was given an arsenic preparation and *x*-ray treatments. The tube used was what Clendinnen terms a three-degree tube, situated about 4 inches distant from the tumor, with a current of 3 mp. in the primary. The sittings lasted about ten minutes, three times a week, with the exception of a few intermissions owing to a slight dermatitis. After 27 treatments the tumor had apparently disappeared, and two months later it had totally disappeared.

Revue de Chirurgie, Paris.

Last indexed XLV, page 1282.

24 (XXV, No. 9.) *De l'arrachement de la tuberosité antérieure du tibia (tearing out). Gaudier et Bouret.
25 *Un nouveau procédé commun à la gastrostomie et à la jejunostomie. José Arce (Buenos-Ayres).
26 Anomalies de developpement des aponévroses chez les dégénérés. Ch. Féré.
27 *Du Cancer de l'antre pylorique. X. Delore et R. Leriche.
28 *Surgery of the Heart.—La chirurgie du Coeur. P. Guibal. (Commenced in No. 3.)

24. **Fracture from Tearing Out of Tuberosity of Tibia.**—Gaudier and Bouret review the 15 cases of complete and the 6 cases of incomplete tearing out of the anterior tubercle of the tibia on record. They discuss the various features and the prognosis and emphasize the fact that the restoration to normal of the limb depends on proper treatment. In 17 of the cases medical treatment alone was attempted, but the fine results attained in the 5 cases treated by surgical measures encourage further intervention in this line. The pain of the fracture is always at the exact point of the solution of continuity. In case of incomplete fracture, the swelling takes the form of a crescent and the ecchymosis extends far downward on the leg. In case of complete fracture with involvement of the synovial membrane, the local swelling is surmounted by a characteristic swelling suggesting an effusion into the joint. The patella generally slides upward from 4 to 10 cm. and is abnormally movable in all directions. Early massage is important in treatment of the incomplete fracture. Hemarthrosis requires operative treatment. In general, reduction of a complete fracture is easy, but in Gaudier's case a silver wire was passed through the ligamentum patellare in order that the necessary traction could be safely exerted. The fractured portion was nailed in place or sutured with wire or held with a Jaccoel double-pointed nail in the various cases reported. After the suture, the leg was placed in a cast for ten days, after which massage and passive movements were begun. Gaudier's patient was able to walk on the twenty-first day after the operation, which was performed thirteen days after the accident. The perfect results after the broken portion was secured with the double-pointed nail and with a wire suture are shown in a radiogram.

25. **Improved Technic for Gastrostomy and Jejunostomy.**—The simple technic described prevents reflux of fluids injected to feed the patient and also prevents the loss of bile or pancreatic juice. The loop of intestine or the stomach wall is fastened in the wound and the seromuscular coat is fastened to the parietal peritoneum only, with from four to six U-shaped, fine, silk sutures, leaving exposed a patch of the wall of the jejunum not larger than 1 sq. cm. at most. The walls of the abdomen are sutured above, still leaving this patch exposed. A Nélaton sound is then worked into the exposed part and pushed in for from 8 to 10 cm. toward the right. The sound is withdrawn after the nutrient fluid has been injected. The sound should be withdrawn very slowly, and if no more than 200 or 300 c.c. are injected at two-hour intervals there will be no reflux of fluids. In the 2 cases described, the results were eminently satisfactory, as also in a case in which gastrostomy was done by this technic.

27. **Cancer of the Pyloric Antrum.**—Delore and Leriche relate the particulars of 8 cases of juxta-pyloric cancer to call attention to the special features which distinguish a malignant neoplasm in the antrum. In every case in their experience the tumor was hard, like pasteboard, not knobby. The first stage of the development of a cancer of the antrum is characterized by gastric troubles, but vomiting is not observed. In the second stage, the symptoms are those of stenosis of the pylorus. The possibility of a tumor in the antrum should be suggested when a woman in the neighborhood of 50, previously healthy, presents certain vague digestive troubles, a little oppression, pains of variable intensity, a burning sensation, and sometimes acid or watery regurgitations. At the same time the appetite suffers, the patient loses relish for meat and fat food, and she grows thin and weak, although still able to keep about. The symptoms may persist about the same for several months or even years. One of the patients described had been a "dyspeptic" of this kind for thirteen years, but there had never been any vomiting. The lesion was found to be very extensive. Another patient had had watery regurgitations every morning for a year. In another patient this stage lasted only three months. The tumor in this case was evidently unusually virulent, as recurrence was observed seven months after resection of the stomach. Pain is frequent in this variety of cancer, presenting the characteristics of hyperchlorhydria. Tardy hyperchlorhydria should be regarded with suspicion. Watery regurgitation is another suspicious symptom. The end of this stage is signaled by the appearance of a tumor, but it is not definite at first and may escape discovery for a time, during which the patient is usually treated with medical measures until the second phase of the malignant disease announces its onset by vomiting. Cachexia rapidly develops and surgical intervention is then too late to effect a cure. Laparotomy performed during the first stage always revealed more extensive lesions than had been anticipated. Delore's experience has convinced him that cancer of the pyloric antrum is, of all gastric cancers, the most amenable to suitable surgical treatment if this is resorted to in time. Its movability, the distance from the duodenum, its slow evolution, all are condi-

tions which favor gastrectomy. The operation should be extensive, with subtotal ablation of the stomach. Delore lost only 1 out of the 7 patients on whom he has operated since 1903. Only 1 patient has presented recurrence; a secondary gastroentero-anastomosis was done a year ago, and the patient is still alive. Her condition is evidently much better than if the latter operation had been done at first.

28. **Surgery of the Heart.**—Guibal summarizes the details of 66 cases of injury of the heart in which a suture was attempted, adding 4 more in which the operation was not concluded. The bullet was not extracted in some of the cases, but causes no disturbances. Experience has shown that it is practicable and important to ligate the coronary vessels when they are found injured. Guibal has studied on dogs and rabbits the symptoms of various kinds of injuries of the heart and the best technic for treating them, as he relates in detail. Stab wounds bleed the most, and those inflicted during systole more than those in the diastole, and the perpendicular more than the slanting. A wound in the left ventricle stops bleeding sooner than one in the right. Even the smallest wound in the auricles proved fatal for rabbits. The patients recovered in 26 out of the 66 cases recorded, the proportion of patients saved by prompt intervention being thus 39.3 per cent. Twelve of the patients recovered without the slightest complication. The signs in Lisanti's patient alone suggest a possible aneurism in the heart. The extensive monograph concludes by recommending cardiorrhaphy as liable to save the patients from almost certain death while leaving them with a heart nearly as sound and vigorous as it was before the injury.

Semaine Médicale, Paris.

29 (XXV, No. 47, Nov. 22.) *La typhlite ptosique et son traitement par la caecoplicature (inflammation of cecum from ptosis). P. Delbet (Paris).
30 (No. 48.) *Les troubles de la baresthésie (sensibilité à la pression), et leur coexistence avec l'anesthésie vibratoire. G. Marinesco (Bucharest).
31 (No. 49.) La cyanose entérogène. L. Cheinisse. Review of literature. See page 79 of last volume of THE JOURNAL.

29. **Inflammation from Ptosis of the Cecum.**—Delbet has had a number of patients who complained of disturbances in the region of the appendix and in whom the trouble proved to be the result of ptosis of the cecum while the appendix was found sound. In 3 cases the appendix had been removed on the assumption of appendicitis, but the disturbances persisted afterward. In others he saved the sound appendix from unnecessary removal and it has never given trouble since. The patients are constipated and there is pain in the iliac fossa, which is both spontaneous and elicited on pressure. The pain is more diffuse than in appendicitis, and it is a little higher and outside of McBurney's point. The trouble is essentially generalized paresis of the intestines, most pronounced in the large intestine. The affection is liable to be extremely painful and requires active treatment. Dieting and enemata may give relief temporarily in some cases, but Delbet has found that all disturbances cease when a fold or tuck is taken in the wall of the cecum, turning the fold inward and thus shortening the long bag made by the sagging gut. The cecum is seized with forceps 1 cm. below the mouth of the small intestine, and another forceps is applied on the opposite side. Slight traction on the forceps flattens out the round bag of the sagging bowel, and the part below the forceps is turned up inside the cecum. The straight, horizontal edges left, just below the two forceps, are sutured across with No. 3 catgut. The results of this operation in a case he describes apparently have been entirely satisfactory.

30. **Sensibility to Pressure, Heat, Etc.**—Marinesco groups in four classes the various disturbances in the sensibility noted in pathologic conditions of the nervous system: 1, alteration in all forms of sensibility; 2, abolition of sensibility to pressure or to the vibration of a tuning fork, or to both, with retention of all other forms of sensibility (this is the type of anesthesia to which von Strümpell and Marinesco have called special attention); 3, abolition of sensibility to pain and to heat, with retention of all other forms of sensibility (the syringomyelic type); 4, changes in the sensibility to heat, to contact and to pain, with retention of the sensibility to pressure and to the tuning fork. He is convinced that these various forms of sensibility are transmitted by different sets of conductors. The sensibility of different planes of the tissues is not identical. Pain is not a special sensibility, but rather a defensive reaction. The nerve fibers conducting the different forms of sensibility probably lie close together and may intermingle, while retaining their relative topography, as he shows by a number of illustrations.

Berliner klinische Wochenschrift, Berlin.

32 (XLII, No. 42.) *Ueber das Verhalten der Tuberkel-Bacillen an der Eingangspforte der Infektion (behavior at entering point). P. von Baumgarten.
33 *Zur Pathogenese der Diphtherie. R. Scheller.
34 *Weitere Untersuchungen ueber Radium-Wirkung (action of radium). E. S. London (St. Petersburg).
35 *Zur Verhütung des Kindbettfiebers (prevention of puerperal fever). E. Preiss.
36 Ein Zweiter Beitrag zu den Erfolgen einer einmaligen Kur in Karlsbad beim Gallensteinleiden (results of single Carlsbad "gallstone cure"). F. Fink.
37 *Zur Frage des Menstruation-Fiebers tuberkulöser Frauen (fever). E. Franck.

32. **Behavior of Tubercle Bacilli at Entering Point.**—Baumgarten does not believe that we can decide with certainty as to the route followed by the tubercle bacillus in infecting the organism. Only in rare cases of cadaver infection is it possible to trace exactly the mode of entry. In other conditions, study of the localization, size and extent and arrangement of the tuberculous products in the infected human body may render this or that route more probable, but our knowledge is not certain. The lack of positive data imposes the necessity for considering all routes as possible, and consequently adopting prophylactic measures not only against infection from inhalation and from feeding, but also considering congenital transmission and all other possible sources of tuberculous infection.

33. **Pathogenesis of Diphtheria.**—Scheller has made a practice of bacteriologic examination of the mouth and nose of all patients before and after operations on the nose. He has found that diphtheria bacilli can survive longer in the nose than in the throat, and that apparently healthy persons can harbor the bacilli and be a source of infection to others and to themselves if their resisting powers become reduced from any reason. He has often noticed the development of tonsillitis after operations on the nose. Animal experiments confirm these facts. In a recent case, a young woman was to be operated on for the removal of a hypertrophied turbinal, which almost completely obstructed one side of the nose, with resulting headache and a tendency to coryza. As diphtheria bacilli were found in her nose, almost in pure cultures, during the five days before the operation, Scheller did not wish to operate, fearing that diphtheria might develop, although he had never heard of an instance of the kind. The young woman was healthy, except for scoliosis, and insisted on the operation without delay. She returned every day for after-treatment, and the third day exhibited the symptoms of typical diphtheria with false membranes in the throat. After an injection of diphtheria antitoxin the symptoms subsided. It was learned afterward that the patient had been exposed to diphtheria three weeks before the operation. The bacilli had evidently lurked in the nose all this time without causing infection. The operation had increased the disposition to the disease, and infection resulted. This experience suggests that in many cases of throat diphtheria the nose may be regarded as the entering point of the bacilli. Various influences, chemical, mechanical, infectious or of other nature, might increase the predisposition, as did the operation in this case, and may start a diphtheria process in a bacilli carrier. The practical lessons from this experience are that persons in the environment of diphtheria patients—who are almost certain to harbor diphtheria bacilli in their nose or throat—should avoid all injurious external influences liable to fan the spark into a blaze. Also that the bacilli should be destroyed by diligent disinfection of the nose and throat, without waiting for them to die off spontaneously.

34. **Action of Radium.**—London has been conducting research with very small amounts of radium, applied for a fraction of a second, to learn the effects of such minimal exposures. He found that the application of 18 mg. of radium, for a quarter of a minute, to the inside of the forearm caused a reddish spot to develop in the course of a few days. The spot grew brown

in time, but shows no signs of subsiding, although two years have since elapsed. In some tests of the action of radium from a distance, he placed 25 mg. radium on top of a cage, 31 cm. high, in which were three rabbits. After two weeks the rabbits' hair fell out, the ears became necrotic, and the spleen, the sexual organs and the nerve elements showed signs of extreme degeneration. The ulcerations on the rabbits' skin always healed over with scar formation. This suggested that connective tissue escaped injury from the action of the radium. This assumption was confirmed by his experience in a case of cancer of the ileocecal valve which had been rendered accessible by a broad opening for an artificial anus, a palliative measure for the inoperable growth. A capsule with 10 mg. of radium bromid was inserted in the artificial anus for twenty-four hours on five occasions during the course of six or seven weeks. The cancer did not seem to be influenced, but the wound over it rapidly healed, the artificial anus closing by the rapid formation of granulation tissue under the influence of the radium.

35. **Prevention of Puerperal Fever.**—Preiss urges the distribution of circulars to midwives describing the means of avoiding puerperal fever. The midwife must give one of the circulars to each pregnant woman applying to her, and when the birth is reported the official should inquire whether the midwife gave the circular. If not, she should be fined. Preiss gives a suggestion for the contents of such a circular.

37. **Fever During Menstruation as Early Sign of Tuberculosis.**—Franck announced four years ago that a rise in temperature preceding or during menstruation is a strong presumptive sign of a morbid process somewhere in the body. It points especially to tuberculosis, and if the woman is anemic and thin, with a tendency to sweat and to catch cold readily, the physician will do well to inaugurate antituberculosis treatment or to recommend a sanatorium, superfeeding or a course of cinnamic acid or iron and arsenic. He is convinced that the normal limit of the temperature is 37.5 C. (99.5 F.), measured in the rectum, and that even a fraction of a degree above this is fever. Sabourin and Kraus have also recently pointed out the importance of fever during menstruation as an early sign of tuberculosis. Measured in the rectum, a fraction of a degree above normal may be due to the hyperemia of some inflammatory affection in the adnexa, but, if such can be excluded, then the assumption is in favor of tuberculosis.

Centralblatt f. Chirurgie, Leipsic.

Last indexed XLV, page 1992.

38 (XXXII, No. 41, Oct. 14.) Zur Resektion des Wurmfortsatzes (appendix). T. Kölliker.
39 Bullet Wound of Heart. Extraction of Bullet from Rear Wall. Recovery.—Schussverletzung des Herzens, etc. Z. von Manteuffel (Dorpat).
40 (No. 42.) Zur Radikal-Operation der Nabelbrüche (umbilical hernia). E. A. Polya.
41 Die Radikal-Operation der Hernia obturatoria. M. Sträter.
42 (No. 43.) Celluloid als Wundverband (for dressing wounds). A. C. Wiener (Chicago).

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

43 (XXXI, No. 44.) *Zur Diagnose der Nebennierengeschwülste (tumor in suprarenals). J. Israel.
44 Ueber die differential-diagnostische Bedeutung des Agglutinations-Titers für Typhus und Paratyphus. L. Zupnik.
45 *Das Gär-Saccharoskop, ein neuer Apparat zur quantitativen Zuckerbestimmung (determination of sugar). H. Citron (Berlin).
46 Weitere Spirochæten-Befund bei Syphilis. K. Flügel. Id. A. Brönnum and V. Ellermann.
47 *Permanent Changes in Skin After Radium Exposures.—Ueber bleibende Hautveränderungen nach Radiumbestrahlung und ihre Bedeutung für die therapeutische Anwendung der Becquerel-Strahlen. H. E. Schmidt.
48 Die intravenöse Salizyl-Behandlung. Rubens.
49 *Ueber Wind und Zugluft (drafts). M. Herz.
50 *Prevention of Vomiting in Treatment of Tapeworm.—Zur Verhütung des Erbrechens bei Bandwurmkeren. E. Apolant.
51 (No. 45.) *Therapie der functionellen Psychosen. E. Mendel.
52 Versuche über die bakterizide Fähigkeit des Serums.—O. Bail.
53 Fortschritte in der chirurgischen Behandlung der Darmkrankheiten (progress in intestinal affections). A. Tietze.
54 Improved Removable Plaster Corset.—Vereinfachung des abnehmbaren elastischen Gipskorsett. K. Gerson (Berlin).
55 Aronson's Antistreptococcenserum bei 3 Fälle von puerperaler Sepsis. P. Hanel.
56 Tongs for Picking Up Things from the Floor, etc.—Die Greifschere, ein Beitrag zur Krankenpflege. C. Moeller (Erkner). For persons unable to stoop.

43. **Diagnosis of Tumors in Suprarenals.**—Israel reviews the lessons he has learned from 9 cases of suprarenal tumor. The differentiation of a tumor under the costal arch is mainly by exclusion. If the kidney, gall bladder and liver can be excluded, a tumor in the suprarenals may be assumed. A tumor in this region may also be suspected when indications of a malignant affection in the kidney or suprarenals are accompanied by paroxysms of pain and paresthesia in the region of the lumbar plexus, although no tumor can be discovered by palpation. Febrile states under these conditions, with exclusion of other causes of fever, are corroborative evidence. He gives illustrations of his cases, classifying them in five groups, principally according to the palpation findings.

45. **Saccharoscope.**—Citron's instrument is based on the loss of weight during the fermentation of the sugar in the urine. It is said to be reliable, simple and convenient.

47. **Permanent Changes in Skin After Radium Exposures.**—Telangiectasia is observed at the edges of the cicatricial atrophic skin after radium as after Roentgen exposures. It appears much more tardily, and Schmidt regards it as a new formation of vessels. He exposed eight spots on his own arm to the action of 5 mg. radium bromid, and telangiectasia developed at each point from four to six months later. The exposures were from twenty to ninety minutes long, and the telangiectasia was proportional to the length of the exposure. At two other points exposed for only five minutes there is still a visible pigmentation and the blood vessels are evidently enlarged. This tardy action of the radium rays interferes with their use for vascular nevus, as the final outcome of a white cicatricial surface, striped and spotted with red, is worse than the original nevus. Finsen treatment is far preferable. Forchhammer has thus cured 49 cases, the smaller nevi vanishing completely and the larger ones showing notable improvement.

49. **Wind and Drafts.**—Wind is air under pressure, and is experienced as agreeable. A draft, on the other hand, is a current of air under lesser tension than the prevailing barometric pressure. The air is being sucked out of the room, and, therefore, it has an aspirating effect, producing suction, which is experienced as disagreeable. It makes one feel colder than when wind of the same temperature is blowing on the body. Herz has noticed that the skin feels a weak outward draft at times as if cold air were blowing inward.

50. **Prevention of Vomiting in Tapeworm Cures.**—About fifteen minutes before administering the tapeworm remedy Apolant gives one or two 3 gm. tablets of equal parts of menthol and saccharum lactis. This reduces the sensitiveness of the stomach without interfering with the action of the tapeworm-expelling drug.

51. **Treatment of Functional Psychoses.**—Mendel lays great stress on medical oversight of children whose parents are inclined to be "nervous," if the children display the least tendency that way. Especially before puberty is it advisable to remove the child from the home atmosphere to some family in the country or in a small town living a simpler, more wholesome life. Milk, vegetables and fruit should be the principal diet for such children. In a confirmed psychosis, wet packs, baths and massage should be given a thorough trial in case of insomnia before resorting to drugs. When the patient refuses to eat, a glass of milk or bouillon and crackers should always be left on a table beside the patient's bed. He will sometimes be thus tempted to eat when he thinks no one is looking. Patients who soil themselves should be taken at brief intervals to the water closet, and ingestion of fluids should be restricted. Another point which Mendel emphasizes is that nothing should be said in the hearing of patients with mental derangement that would cause annoyance if repeated to others later. The lack of this caution has led to much annoyance in some instances. He regards opium in increasing doses and then tapering off as the main reliance in melancholia, supplemented by rest in bed and a strengthening diet. He gives opium to a maximum of 1 gm., with injections of oil in case it causes constipation, and a few drops of hydrochloric acid after meals.

Münchener med. Wochenschrift, Munich.

57 (LII, No. 42.) *Zur Verhütung der nach Intubation und sekundärer Tracheotomie zuweilen sich einstellenden Kehlkopfstenosen (prevention of stenosis of larynx). H. v. Ranke.

58 *Heutige Grenzen und künftige Ziele der Asthma-Therapie. G. Avellis.
59 Komplikationen nach Kropf-Operationen (goiter). Reichel.
60 *Die venerischen Krankheiten in der Garnison Metz (venereal statistics). M. Müller.
61 *Ueber die Verwendbarkeit der konzentrierten Karbolsäure zur Behandlung des Skrophuloderma und der Furunkulose (treatment with carbolic acid). H. Vörner.
62 Klinischer Beitrag zur Serumkrankheit (serum disease). H. Rosenhaupt.
63 *Appliance to Aspirate Secretions from Accessory Cavities of the Nose.—Vorrichtung zum Ansaugen von Sekreten aus den Nebenhöhlen der Nase. O. Muck.
64 *Origin of Cancer.—Nochmals die Entstehung des Karzinoms. R. Borrmann.
65 *Camphor Internally in Erysipelas.—Die Pirogoffsche Kampherbehandlung des Erysipels. Mayer.
66 Silver in Treatment of Appendicitis.—Ueber innere Behandlung der Blinddarmentzündung. A. Schmitt.
67 (No. 43.) Zur Etiologie der epidemischen Genickstarre (epidemic cerebrospinal meningitis). Manteufel.
68 Zur Kenntnis der lokalen Eosinophilie. C. Stäubli.
69 Zur Symptomatologie der Barlowschen Krankheit. E. Schlesinger.
70 Verwendung des Ohrknorpels zum Ersatz von Liddefekten (plastic restoration of lid from ear). A. Birch-Hirschfeld. Id. Elster and Haass.
71 *Typhoid Epidemic Among School Children.—Typhusepidemie unter Kindern. Tischler.
72 Fall von Akromegalie (Zerstörung der Hypophysis durch Blutung (destruction of hypophysis by hemorrhage). L. Bleibtreu.

57. **Prevention of Laryngeal Stenosis After Intubation.**—It has been von Ranke's experience that stenosis of the larynx after secondary tracheotomy after intubation can be prevented by not allowing the larynx to be excluded from the respiration a moment longer than it is absolutely necessary. He thinks that the stenosis is due mainly to the lack of the normal participation in the breathing act.

58. **Treatment of Asthma.**—Avellis remarks that internal medicine has washed its hands of asthma since the Leyden crystals have been found to be a consequence and not the cause of the affection. Rhinologists and neurologists also disclaim responsibility in regard to asthma, and the tuberculosis specialists also turn their backs on it. He hopes that more physicians than has hitherto been the case will make a specialty of this disease. The treatment requires a fundamental knowledge of neurology and of neuropathies in general, also a small sanatorium equipped as for nervous diseases with appliances for hydrotherapy, massage, resistance and breathing exercises and air baths, associated with a rhinologic clinic and inhalatorium; in short, a special institution for treatment of non-bacillary lung affections. It would be well, he thinks, if such sanatoriums could be located at different altitudes, so that there might be an exchange of patients to correspond to the climate found best for individual cases. The first attack of asthma should be the warning signal to institute a regular course of training to ward off future attacks, just as the first hemoptysis is the signal for a course at a sanatorium. Several months should be devoted to a systematic course of training in measures to ward off future attacks. The entire mode of life must be regulated to conform to the rules of hygiene, and the respiratory organs should be strengthened by appropriate gymnastics. The patient must also be taught the various measures which have proved effectual in warding off impending attacks. Such as counting at each expiration to divert the mind, voluntary modification of the respiratory rhythm, or stimuli applied to the skin, etc. Such training is especially important for children.

60. **Venereal Statistics Under Unusual Conditions.**—Müller states that the garrison of 24,000 men at Metz is a remarkably high proportion of males to a total population of only 80,000 in the city of Metz. As careful records are kept of venereal disease in the barracks, they allow an unusual oversight of the conditions prevailing in regard to prostitution. The tables show that regulation of prostitutes on the basis of microscopic examination of the secretions has caused a striking reduction in the number of cases of gonorrhea. The proportion of cases of syphilis has not varied materially in the last ten years, averaging about 4 per cent., but the proportion of cases of gonorrhea has dropped from 25.6 to 12.6 per cent. It has ranged from 12 to 12.9 in the last five years. He thinks that the results obtained at Metz speak loudly in favor of systematic microscopic examination of the secretions in the official regulation of prostitution.

61. **Concentrated Carbolic Acid in Treatment of Scrofuloderma and Furunculosis.**—Vörner declares that he does not know of any method of treatment which can approach in efficiency the application of concentrated carbolic acid. For a small, still hard furuncle he touches the center with the acid. In larger ones he applies the acid with a fine needle or sound introduced into the central hair follicle or pore, inserting it as deep as he can. A single application is enough in most cases, but sometimes as many as eight are required. The application is made only once a day. He describes his experience with it in a number of cases, including two extensive carbuncles.

63. **Aspiration of Secretions from Accessory Cavities of the Nose.**—Muck presents a little apparatus which resembles a breast pump. A short glass tube fits into the nostril, the outer end connected with a glass bulb reservoir and also with a projecting tube carrying a rubber bulb. A hole in the nostril tube, just above the reservoir, allows it to be closed with the finger during aspiration, but the air can stream in at any moment in case the pressure becomes painful. This method of removing secretions from the nose and accessory cavities has abundantly proved its usefulness.

64. **Origin of Cancer.**—Borrmann analyzes the reasons for the conflicting findings of various investigators in the field of cancer, and remarks, in conclusion, that none of the so-called parasites are found in very small, young cancers. The reason for this is that these so-called parasites are, in reality, the relics of degenerative processes in the cells, and these processes do not occur early in the younger new growths.

65. **Camphor Treatment of Erysipelas.**—Mayer reiterates that sixteen years of experience with Pirogoff's method of treating erysipelas have only confirmed him more and more in his high opinion of it. He gives, every hour or second hour, .15 gm. triturated camphor, with hot drinks to promote sweating, and the usual external measures.

71. **Epidemic of Typhoid Among Children.**—The public schools at Deggendorf are attended by 1,009 children. About 200 of the poorer children are given their lunch at a soup house established for the purpose. Two of these children were taken sick, December 10, and staid at home, and about ten days later fifty of the others were also affected in the course of nine days, the sickness proving to be typhoid fever in all. The children lived in different parts of town, with scarcely any communication between the families. This epidemic of typhoid among the children eating at the soup house was fatal in two instances. The total number of children affected was 61, while only 43 adults in town and 31 in the adjoining country were affected during the same winter. No children were affected except those who had eaten at the soup house; the drinking water and milk there were above suspicion. A very few scattered cases of typhoid generally occur every year at Deggendorf.

Zeitschrift f. klinische Medizin, Berlin.

Last indexed XLV, page 1769.

73 (LVII, Nos. 5-6.) Relations Between Emotions and Disturbances in Speech.—Das Verhältnis der Affekte zu den Sprachstörungen. H. Gutzmann.
74 Influence of Carbonated Baths on the Pulse and Tonus of the Vessels.—Zum Einfluss der Sauerstoffbäder auf Pulsfrequenz und Gefässtonus. E. Ekgren. (Senator's clinic, Berlin).
75 Influence of Diet and Yeast Treatment on the Putrefaction Products in Urine.—Ueber den Einfluss von Diät und Hefekuren auf im Urin erscheinende enterogene Faulnisprodukte. E. v. Koziczkowsky. (Ibid).
76 Eiweisszerfall und Antipyrese (destruction of albumin). P. Deucher (Sahli's clinic, Berne).
77 *Ueber atypische Leukämien. P. Preiss (Lichtheim's clinic, Königsberg).
78 *Ueber Magen-Atonie und Magen-Chemismus (of stomach). R. Kaufmann (Mannaberg's clinic, Vienna).
79 Zur Kenntnis der Adams-Stokesschen Krankheit. A. Belski (Pskow).

77. **Atypical Leukemia.**—Preiss expatiates on the importance of an early diagnosis of leukemia and allied states in view of Roentgen treatment, which is capable of inducing such pronounced and prolonged improvement that it can almost be regarded as a complete cure. He describes 2 cases of atypical leukemia. The blood picture suggested myelemia, but the affection had nothing in common with that disease. In the

majority of such cases there is lymphatic metaplasia of the marrow of the bones, which is the cause not only of the existing lymphocytosis, but also of the appearance of increased numbers of normal and pathologic cell forms of the myeloid tissue. His first patient was a young man who was suddenly taken sick with pallor, pains in the bones and weakness, with great enlargement of the spleen and lesser of the liver, slight swelling of the glands and retinal hemorrhages, with a high degree of anemia, anemic changes in the reds and preponderance of young forms. The patient died in less than six months. Roentgen exposures of the spleen alone almost entirely banished the leukemia quantitatively about three months before death, while the blood findings became those of pernicious anemia. Before this the blood findings were a mixture of those characteristic of both lymphemia and myelemia. The blood findings in the second patient, a man of 59, also showed the same blending of anemic and leukemic characteristics, but there were no signs of pernicious anemia. The enlarged spleen became reduced in size under Roentgen exposures. The disturbances in this case had been noted for three years, and the patient had both syphilis and malaria in a mild form in his previous history. Preiss regards this case as one of lymphadenoid splenic pseudo-leukemia at first, with gradual formation of lymphomata in the liver and bone marrow and possibly transformation of the disease into lymphatic leukemia. The patient is still under observation.

78. **Atony and Chemistry of the Stomach.**—Kaufmann relates his experiences with 21 patients and with a number of normal subjects in researches on the chemistry of the stomach. His conclusions are to the effect that the figures for the total acidity and for the free HCl, which are given in the textbooks as the normal values, are merely the averages. In reality, these values may range under normal conditions from 5 to at least 90 and sometimes over 100 for the total acidity without any indications of disturbance in the stomach functions. The figure representing the free HCl may likewise range normally from zero to at least 2 or even 3 per thousand. He then reports examinations of over 100 patients with various stomach affections which have demonstrated that cramps, acid eructations, acid vomiting and "heart burn" are more frequent when the stomach acidity is above the average, but still within normal range. Some other factor must be involved to produce the troubles of so-called hyperacidity besides merely the increased amount of the secretion. Whenever a patient is encountered presenting the symptoms of hyperacidity or other chemical gastric trouble the physician must seek for the second pathologic factor which forms the connecting causal link between the chemical findings and the subjective disturbances. In many cases this second factor is obvious in some ulceration, erosion or similar lesion. In these cases the time-course of the secretion may be regarded as the second concurring factor. In other cases, by far the most frequent, atony of the stomach will be found to be this mysterious second factor. Among 53 cases Kaufmann found pathologic dilatation of the inflated stomach in all but 18. When the acidity is a little above the mean average, then the patient presents the symptoms of hyperacidity; when it is a little below the average, the symptoms are those of subacidity or atony. In every instance the disturbances were cured when the musculature of the stomach had regained its normal muscular strength, no matter whether the acid secretion had been reduced to the mean average or not, or still persisted in the extremes first noted. In none of his other patients could any anatomic lesion or atony of the muscles be discovered. Such cases always proved to have been cases of neurasthenia alone, as all disturbances ceased when the neurasthenia had been cured by appropriate measures. The objective findings in these cases were normal. The secretions had not been abnormal, but the stomach mucosa was abnormally sensitive. This hyperesthesia forms the connecting link between the secretory anomalies and the stomach troubles. Better than by dieting or drugs to act on the secretions, such patients are cured by bromids, "water cures," hydrotherapy and forced feeding with coarse, mixed foods. The figures representing the acidity may persist unmodified, but the patients are cured as their stomach loses its excessive excitability.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

PREVENTION AND CURE OF TUBERCULOSIS. A Collection of Articles of a Popular Character on the Subject of Tuberculosis. By S. A. Knopf, J. H. Huddleston, D. A. Willey and Others. Compiled by J. R. Long. Cloth. Pp. 246. Price, $1.25. Denver: H. M. Brinker. 1905.

DIAGNOSIS OF TUBERCULOSIS OF THE LUNG. With Special Reference to the Early Stages. By K. Turban. With an Introduction by Sir D. Duckworth, M.D., LL.D., F.R.C.P. Translated by E. C. Morland, M.D., B.Sc. Cloth. Pp. 135. Price, $2.00. New York: William Wood & Co.

LECTURES ON CLINICAL PSYCHIATRY. By E. Kraepelin. Authorized Translation from the Second German Edition. Revised and Edited by T. Johnstone, M.D. Second Edition. Cloth. Pp. 352. Price, $3.50. New York: William Wood & Co.

THIRD ANNUAL REPORT of the Committee on the Prevention of Tuberculosis of the Charity Organization Society of the City of New York for the Year 1904-05. Paper. Pp. 55. New York: Charity Organization Society. 1905.

A SYSTEM OF MEDICINE. By Many Writers. Edited by T. C. Allbutt and H. D. Rolleston. New Edition. Revised Throughout with Additions. Vol. I. Cloth. Pp. 1209. Price, $5.00. New York. The MacMillan Co. 1905.

A TEXT-BOOK OF THE DISEASES OF THE EAR, NOSE AND PHARYNX. By D. B. St. John Roosa, M.D., LL.D., and B. Douglass, M.D. Cloth. Pp. 621. Price, $3.00 net. New York: The MacMillan Co. 1905.

HANDBOOK OF THE MEDICAL SOCIETY OF THE BOROUGH OF THE BRONX. With Constitution, By-laws and Members of the Society. October, 1905. Cloth. Pp. 44. New York: W. H. Kahrs, M.D.

THE DISSOCIATION OF A PERSONALITY. A Biographical Study in Abnormal Psychology. By M. Prince, M.D. Cloth. Pp. 569. Price, $2.80 net. New York: Longmans, Green & Co. 1905.

PRACTICAL SANITARY SCIENCE. A Handbook for the Public Health Laboratory. By D. Sommerville, B.A., M.D. Cloth. Pp. 310. Price, $3.00. New York: William Wood & Co.

CLINICAL OBSTETRICS. By R. Jardine. Ninety-nine Illustrations and a Colored Plate. Second Edition. Cloth. Pp. 609. Price, $4.75. New York: Rebman Co. 1905.

NEW PATENTS.

Recent Patents of Interest to Physicians:

805339 Syringe. Joseph J. Brin, Chicago.
805009 Making hydrochloric acid. Willis E. Everette, Tacoma, Wash.
805074 Invalid's table. Charles E. Kemp, Williamsport Pa.
804874 Hypodermic Syringe. Joseph W. Nassauer, Richmond Hill, N. Y.
805025 Pasteurizing apparatus. Niels F. Nissen, Copenhagen, Denmark.
805443 Water-soluble vaselin. Friederich Boleg, Cannstatt, Germany.
805948 Container for ligatures, etc. Fred Evans, Summit, N. J.
805851 Medicinal injector. Natusius J. Goldfarb, Dusseldorf, Germany.
805795 X-ray tube. John O. Heinze, Jr., Lowell, Mass.
805959 Astigmatic Cabinet. George E. Holmes, Lockhaven, Pa.
805560 Germicidal cake. Simon N. Kohn, Cleveland, Ohio.
805805 Combined couch and invalid chair. Ezra Loose, Jonestown, Pa.
805826 Vaginal irrigator. Maxwell Vidaver, New York.
806447 Intra-urethral applicator. Benjamin C. Abernethy, Orlando, Fla.
806090 Hot-water bag. Leo Allenberg, San Francisco, Cal.
806615 Pensin preparation. Julius Altschul, Berlin, Germany.
806403 Abdomen-depressing means. Abbie G. Du Pell, Allegheny, Pa
806126 Artificial hand. Harry L. Felio, Zion City, Ill.
806660 Making concentrated formic acid. Max Hamel, Grunau near Berlin, Germany.
806482 Obesity belt. Silas H. Moore, New York.
806188 Medical powder applicator. David W. Rees, Needles, Cal.
806296 Invalid chair and thractor therefor. Ida W. Schmidt, New York.
806589 Pessary. Warren C. Smart, Sterrett, Ind. T.
806305 Inhaler. W. D. Stearns, Detroit, Mich.
806306 Fountain syringe. Charles A. Tatum, New York.
807365 Water bag. Anton C. Eggers, New York.
807366 Surgical operating cushion. Anton C. Eggers, New York.
807160 Surgical appliance. Hubert T. Foote, New Rochelle, N. Y.
807169 Rectum supporter. Edward H. Higbee, Roodhouse, Ill.
806976 Fumigating composition. Job R. Inskeep, Gallon, Ohio.
807293 Sputum Cup. John E. Lee, Conshohocken, Pa.
807299 Vibrator for medical use. David T. Marshall, New York.
807124 Vaginal glass applicator. Maurice B. Pearlstien, New York.
807203 Chemical chart. Charles D. Poore, Minneapolis, Minn.
807127 Hair cleaning, drying and medicating comb. Emory R. Powers, Los Angeles, Cal.
807098 Limb appliance. Arthur M. Valentine, Janesville, Wis.
807427 Artificial leg. John T. Angar, New York.
807905 Syringe. John C. Blair, Louisville, Ky.
807657 Abdominal appliance. Sidney H. Burns, New York.
807597 Respirator. George T. Carpenter, Chicago.
807667 Biological purification of liquids. Wm. P. Dunbar, Hamburg, Germany.
807723 Catamenial sack. Joseph Griffith, Springfield, Ohio.
807673 X-ray tube. Emil Gundelach, Gehlberg, Germany.
808049 Invalid's commode. Wm. A. Hardy, Louisville, Ky.
807468 Sanitary drinking apparatus. Freeman S. Hunter, Bedford, Ind.
807964 Apparatus for producing ozone. Wm. P. Rice, Chicago.
807640 Manufacturing hydrochloric acid. Isaiah L. Roberts, Brooklyn, N. Y.